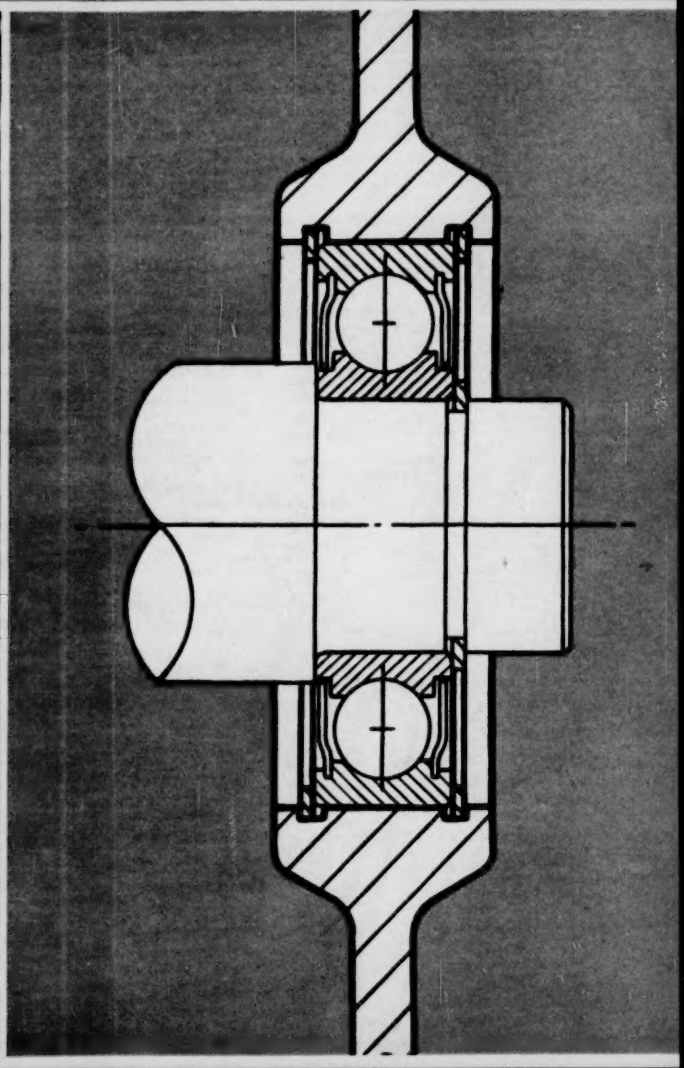
News Magazine of the American Standards Association, Incorporated



American Standards Association, Inc.

Marginal Notes

Turnabout Is Fair Play—

In this year of international meetings in the US (ISO, New York, June 9-21) it is only fitting that the USA look at what standardization means in other countries.

In "Dollar Savings Through Standards," (STDZN, October, 1951) we published U. S. industry's own report of its experience with the use of standards. In this issue (page 69) we have the privilege of publishing the first installment of a similar report compiled by the Dutch national standards association, (Hoofcommissie voor de Normalisatie in Nederland). This is the first-hand account by Dutch companies of how they use standards and what their experience has been. Many of these companies have export businesses and are affected by standards in other countries; many of them have import businesses and are equally affected by standards in other countries.

The material was collected for STANDARDIZATION by F. van Teutem, director of the Central Standardization Bureau, which is the headquarters of the national standards body in the Netherlands. Mr van Teutem became associated with the Bureau about thirty years ago as the electrical engineer on its staff and after having been the associate director for a number of years, became the executive officer in 1951.

STANDARDIZATION considered it a rather unusual coincidence to be approached recently for a story by the Netherlands Chamber of Commerce in the U.S. and to be able to make available to them this documented story of standardization in their own country. The material will form the basis for an article in *The Courier*, published by the Netherlands Chamber early this year.

One Of A Series—

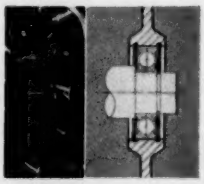
What choice bits of history—particularly about standards—do you know? If you have an anecdote to contribute, the clever artist, Tom

Ross, will put it into one of his inimitable cartoons.

On page 90 you will find the second of Mr Ross's amusing contributions to standardization history. As most everyone knows, Mr Ross received honorable mention last year from the Art Directors Club of Chicago for his creation of Digby Holeston Postlethwaite.

In Our April Issue—

You will want to follow the story of Netherlands standards to its conclusion; see what standards mean to safety in the gas industry; and read the human interest story about how use of a standard protected a workman from serious injury.



Our Front Cover

Both ball and roller bearings and the mountings in which they are assembled on the job, have been the subject of long and heated standardization discussions. Progress is being made toward agreement on a number of problems—agreement on such a broad scale that the resulting standards can be designated "American Standard". Most recent to reach this final "American Standard" approval are the standards on dimensions and other requirements for bearing mountings and the accessories (nuts, bolts, etc) used in assembling them. For a discussion of these standards see page 78.

Note:—The housing shown in the diagram on the cover uses two snaprings for housing shoulders and has a through bore. Diagram, Marlin-Rockwell Corporation; Photograph, Anti-Friction Bearing Mfg Assn, Inc.

Opinions expressed by authors in STANDARDIZATION *are not necessarily those of the American Standards Association.*

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Standardization is dynamic, not static. It means not to stand still, but to move forward together.

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ASA

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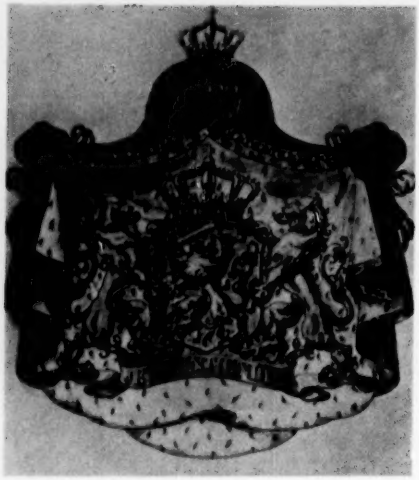


Netherlands Information Bureau

Coat of Arms of
Queen Juliana

The Netherlands

Holland Standardizes

By ir. F. van Teutem

Secretary, Hoofdcommissie voor de Normalisatie in Nederland
(Netherlands Standards Association)

PART I

IT is said that Archimedes, ancient mathematician and physicist who discovered the principle of the lever, exclaimed: "Give me a place to stand outside the earth and I'll move the world." He thus called attention to the fact that, if applied correctly, even a small force can bring about spectacular results.

Archimedes' observation dates back to the second century B.C., but today, the principle still holds true. It illustrates how the comparatively small force of voluntary standardization can bring about economic and technical coordination in the business activities of a free society.

It is possible, of course, to build up fine specifications and regulations, particularly when we have the full cooperation of our scientists and laboratories. But how is it possible to assure that those standards actually will be put to use by thousands of manufacturers and tens of thousands of buyers, whether or not they have a direct interest in using them?

The solution of this problem, in principle, was given by Archimedes. As far as we can see here in Europe, however, the solution, in fact, was first offered by the American Society for Testing Materials in 1898. At that time the Society reorganized to permit development of standards by agreement as well as to promote scientific progress through tests and investigations.

In Europe, the solution was offered first by the British Standards Institution. Founded in 1901 as the "Engineering Standards Committee," the Institution last year celebrated its Fiftieth Anniversary.

The solution was: To invite all groups concerned to collaborate voluntarily, bringing together their experience and knowledge, and by means of open discussions to set up together recommendations of good practice.

Since the reorganization of ASTM and the organization of BSI, this movement has spread all over the world. It can only be regretted that it did not start earlier.

Standards most often are related to industrial problems; however, the subjects dealt with by various countries show a wide diversity. It might be said that standards have to do with practically every question relating to material things where repetitive action is concerned, and where give and take among human beings is involved. Even moral relations are based on standards. As Roger E. Gay said at the American Standards Association's National Standardization Conference, November 1950: "Voluntary standardization is a touchstone of free enterprise." This could in our opinion be widened into: "Voluntary standardization is a touchstone of freedom."

Returning to Archimedes, it should be noted that he spoke of moving the world, not of moving separate countries. If standards are developed and applied intensively on a national basis without adequate and continued progress in the international field, trade barriers may become stabilized and more firmly fixed rather than diminishing in importance. We in Europe can understand that USA delegates cannot attend all conferences on this side of the ocean; however, they can assist by correspondence. We hope that USA will cooperate heartily in this way in the international work whenever delegates cannot be sent to attend meetings personally. There may be differences in viewpoints and interests that would seem to hinder agreements, but the national standards organization represents and looks out for the general interests of its member organiza-

Netherlands Information Bureau

The Philips Works at Eindhoven, one of the largest manufacturing plants in The Netherlands, produces electrical equipment. The company has branches throughout the world, with a total of 80,000 employees. Its standardization program dates from 1928. Some 1700 company standards and 900 factory standards are now in use. Because of its world-wide activities, the company takes an active interest in international and national standards.

tions in agreements reached through the International Organization for Standardization.

Experience has shown that it is seldom possible to establish a single world standard for any product. However, we must try to coordinate national standards and prevent collision between them.

Science and knowledge remain international, notwithstanding political difficulties.

When applied to business, the lever of self-rule requires time to take effect. We cannot expect that a standard of today will be applied everywhere tomorrow. It requires not only time but also effective use of every means that can contribute toward accelerating its application.

Among these are: collaboration with the authorities; propaganda and skillful publicity; education; correct tactics; replies to inquiries. The committee developing the standard itself should be in charge of bringing about a steady increase in the use of its standards. The selection of subjects a committee handles is the basis of its success; therefore, the composition of subcommittees and working groups must be carefully and consistently controlled.

As an indication of how standards are used in the Netherlands, it may be pointed out that all publications issued by the standards association are sold regularly and continuously from the time they are issued until a new edition is published.

In the Netherlands, as elsewhere, we find two broad streams of standardization:—one on a national scale; the other within the individual organizations. These two are closely interconnected. In the case histories published below they are both included. The difference in "direction" between the work on a national scale and that within the individual undertaking causes important differences in method of application. However, these streams run in parallel as far as the same subjects are concerned.

All of the standards published in Holland can be divided into three groups:

(*a*) Those related to general subjects, such as units, symbols, terminology, drawing practice, paper, limits and fits, traffic, etc. These are applied in practice throughout Holland, except for paper sizes. The use of standard sizes of paper (which required an essential change from existing practice to the relation $\sqrt{2}$ between the dimensions of a sheet) is estimated by the committee in charge to be about 50 percent.

(*b*) Those covering rules and recommendations for safety, durability of installations, health regulations, prevention of accidents, public welfare, etc, controlled by government authorities and national organizations.

These standards are to a large extent put into use within a rather short time after having been officially released, regardless of whether they are advocated by special action on the part of the national association.

(*c*) Standards relating to properties and dimensions of materials and products to be manufactured and distributed through regular trade channels. Some of these standards have been fully adopted; others have encountered difficulties, due to technical problems, or for commercial or psychological reasons, including difficulties caused by variations in foreign standards. Introduction of these standards into practice requires time and care. Sometimes buyers resist change in existing customs, or hold to special viewpoints. The trend toward standardization within individual undertakings as well as within public services, and the efforts now being made toward simplification will perhaps facilitate the introduction of these standards into practice.

It is considered that a few standards are established on somewhat too high a scientific level for general use; in other cases, committees refuse slight modifications initiated by private interests. This situation, however, will always have to be accepted in a free society.

In order to give you an impression as to what extent standardization has succeeded in Holland, we have asked some manufacturers and services to send in a concise statement. These are given below.

These statements sometimes refer to HCNN. This means Hoofdcommissie voor de Normalisatie in Nederland, the general body for national standardization. Reference to NEC means Nederlands Electrotechnisch Comité, the national committee of the International Electrotechnical Commission. The standards specifications are indicated as "N *(no.)*."

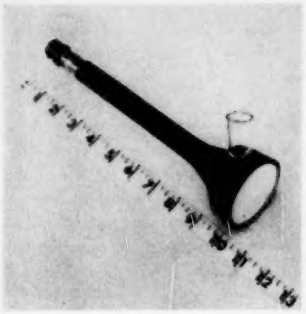
Netherlands Organizations Tell Their Experience

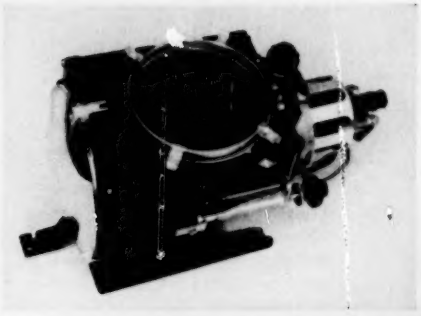
The N. V. Philips' Gloeilampenfabrieken, Eindhoven, employing 80,000 workers all over the world, recently celebrated its 60-year jubilee. It writes:

N. V. Philips started in 1891 with the manufacture of incandescent lamps and has developed since then into an international concern with interests in almost all countries of the civilized world. It has widened its activities not only to include the whole electric-lighting field but also to cover electric tubes and various kinds of electronic and other apparatus.

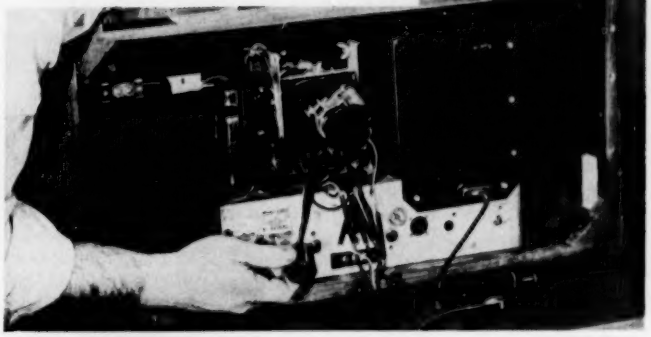
When the company started the manufacture of radio appliances, it felt even more than before the necessity of standardization. Therefore, it decided in 1928 to create a special department for standardization. Having started with the standardization of drawing practices and screw threads, this department soon widened its work to replacement parts. Nowadays it deals with practically all activities which are of general interest to the concern.

The Central Standardization Department is under direct supervision of top management. At present it employs 55 persons and has direct responsibility for the "concern-standardization" (company standardization). It also has the task of coordinating and stimulating "factory standardization" in the different Main Industry Groups (lighting, electronic tubes, radio apparatus, x-ray apparatus, acoustical equipment, industrial apparatus, and so on). Company standardization is carried out by a number of technical committees. Responsibility for it is in the Main





North American Philips Co., Inc.



Television equipment is a recent addition to Philips' products. The company specializes in sets that not only offer a direct view of the image, but also can project it on a separate screen. The projection tube made in Holland (above, left) fits into the focusing coil and lens box manufactured in the U. S. (above, right). Inserted into the direct view receiver (center), the optical unit becomes part of the complete television cabinet (below).

Standardizing Board, and the decisions are set down in company standards. Factory standardization is under the direction of the Director of the Main Industry Group concerned, who is assisted by the Officer for Factory Standardization and in most cases by a Factory Standardization Committee. Factory standardization is laid down in "factory standards".

At present, the collection of standards consists of about 1700 company standards and about 900 factory standards. Some of the principal groups are:

- Basic materials (metallic and non-metallic, including chemicals, oils, lubricants, lacquers, and paints)
- Fixing (replacement) parts
- Screw threads
- Limits and fits
- Tools
- Factory and office equipment
- Machines and machine parts
- Component parts for electrical and mechanical construction
- Electrical installations
- All kinds of directions and information (drawings, constructions, testing, climatic conditions, safety, units, symbols, and so on)

The Philips concern has a great interest in national and international standardization. It holds the view that national and international standardization should—as a rule—be advisory and not compulsory.

Nevertheless, we are convinced that due application of national and international standardization, wherever possible, is necesary. For an international concern such as ours, it is of the greatest importance that standardization, including safety requirements and the like, and including methods of testing, present the greatest possible uniformity in the various

countries throughout the world.

The concern faces enormous difficulties due to the fact that at present substantial differentiation exists in different countries. Just by way of example we might mention the inch millimeter question, all the variety of electric current characterstics (direct current and alternating current, different voltages, different frequencies), and differences in safety requirements.

Therefore, the concern takes an active part in national and international standardization and it strives to adapt its own standardization as far as possible to both.

In promoting national and international standardization it holds the view that general agreement can only be obtained if all participants try to find that solution which is considered to be the best one, logically and economically. This means that one must be willing in principle to alter his own practice when it is apparent that it is necessary to do so in order to get general agreement. In the Netherlands we are closely related to the HCNN and the NEC, taking an active part in many of their technical committees. We follow as much as possible the HCNN standards; however, it is not always possible to do so. In some cases we are forced to deviate because of special requirements in our own concern; more frequently, however, such deviation is due to the fact that a number of foreign official standards, to which we have to comply, deviate from the HCNN standards. This latter inconvenience can only be solved by international agreement on standardization.

In the international field we take an active part in the work of the International Organization of Standardization and the International Electrotechnical Commission through our national organizations, HCNN and NEC. Generally speaking, we are convinced that due application of Dutch standards can best be promoted by international agreement. The latter is of tremendous economic interest: the larger the domain that is held under economic control, the greater the importance of international agreement in the field of standardization. Let the USA see this very clearly and let it, more than before, take an active part in the work of the big international standardizing bodies, ISO and IEC. By doing so it will render a great service to the free world!

The Netherlands Cable Works (NKF) Delft), manufacturers of electric cables with paper insulation for all voltages as well as conductors for transmission lines, says:

In the field of paper-insulated underground cable, standardization has been of great advantage, not only to consumers, but also to the manufacturer. This standardization was started after 1921, and was accomplished by close cooperation of the two parties concerned.

As far as the Netherlands are concerned, conditions before 1914 and those after should be distinguished. Prior to 1914 there was no cable industry in the Netherlands. Cables were purchased from foreign manufacturers, each of them selling types of constructions based on the experience gained in their particular country. As, at the time, no methods for appropriate testing had yet been developed, purchasing a cable was generally a matter of trust. When, in 1914, the Nederlandsche Kabelfabriek was put into operation, every factor that could obstruct standardization was present. There was not even tradition that might serve as a guide. There was no copper wire drawing plant in the country. If it were necessary to prove what disadvantages result from the absence of standardization, that would have been the time to collect the proof.

As soon as possible after 1918, importation of a certain series of copper wires, of which the sections had been adapted to the metric system customarily used in the Netherlands, was resumed. Many varieties as to thickness of dielectric, lead sheath, and type of armoring persisted, until, in 1921, a standardization committee set to work to draw up specifications for the normal construction and requirements with which composition and material should comply. This committee was made up of representatives of all producers and consumers of electricity, as well as of cable makers. It was resolved that for low tension cables only two classes should be included; viz, a heavy and a light construction. The former was intended for marshy soil and in large towns. The light construction was intended for use in small towns, factories, and dry soil.

As consumers also had collaborated in the standardization committee, all parties were confident about the suitability of the constructions drawn up.

Methods of testing and size tolerances had also been standardized. Determination of the dielectric loss of the insulation brought about a special development in the field of standardization in the Netherlands, for it resulted in the formulation of special requirements in this respect. These have remained unique in the world for many years.

In 1925 specifications covering cables for voltages from 6 kv upwards were standardized, justifying certain maximum values for the dielectric loss up to $2\frac{1}{2}$ times the working pressure, even after heating the conductor to 40 C. This meant that not only dimensions were standardized, but also the quality of the dielectric as well, while every certainty was held out to the electric power utilities that the life of the cable dielectric was practically unlimited. In view of the intensive electrification of the densely populated Netherlands, this was deemed a matter of vital importance. Further development and increase of voltages up to 65 kv were followed, as a matter of course, by similar specifications that were guaranteed by the factory. Special attention was also paid to the protection of the lead sheath against corrosion in damp soil, and appropriate standard specifications were drawn up. Thus, from as early as 1925, close consultation of the cable manufacturers with representatives of the consumers had assured that safety in service and the life of the whole electrical network were up to all requirements that could be realized by modern technology.

This standardization reduced the number of types of cable the electric power utilities had to keep in store.

It enabled the factory to produce for stock and to supply promptly in urgent cases. It is evident that this also reduced to a minimum the cost of preparatory work for production and control of finished products.

Standardization of cables for telecommunication had existed for many years also. As the telephone network is Government-owned, so that practically there is only one buyer, it is not surprising that these types of cable were standardized. It may be considered remarkable, however, that in the field of power cables as well, with numerous independent customers, standardization has been completely successful for 25 years.

Union of Directors of Electricity Supply Works. In extending our discussion of electrotechnics, we add a general view given by the Union of Directors of Electricity Supply Works, which has acting members in almost all committees in the electrical field.

In the Netherlands, electric power utilities are publicly owned. From the beginning of electrification the utilities stipulated that installations connected to their networks must comply with certain wiring rules and that material used in these installations must have their approval. This attitude has been of great benefit to the public and to the cause of electrification; it has prevented to a large extent the risk of inadequate or even dangerous installations and material.

In the course of time differences in the wiring rules of the various utilities developed, however, and the same happened with regard to the approval of material, such as cables and wires, accessories, and the like.

As electrification grew nationwide, it became clear that this situation, which proved to be a danger to the rational development of electrification and the electrical trade, should be altered and that stringent standardization was urgent.

Two measures were taken:

A national wiring-code was set up, and gradually the utilities abolished their own wiring rules and switched over to the standardized code. The advantage is evident. Contractors have only a single wiring code to follow, irrespective of the region in which the installation is made. This means simplification in work and in stock.

The second measure is perhaps still more important. The utilities stopped testing and approving wires, cables, accessories, appliances, and set up a cooperative testing organization, called KEMA, for this purpose. An approval by the KEMA testing station implies that the use of the relevant material is allowed everywhere in the country. The usefulness of this simplification is evident. KEMA tests in accordance with national rules for the various materials.

For a long time this standardization effort has not been confined within the borders of the country. From 1926 onward, there has been growing cooperation among Western and Central European countries with regard to uniform regulations for electrical material, accessories, and appliances for general use. This work is now done in the International Commission on Rules for the Approval of Electrical Equipment (CEE), in which 13 European countries are represented. The purpose of CEE is creation of a wide market for electrical goods by promoting uniformity, even in detail, of regulations and tests for wires and cables, accessories, and appliances. The CEE is cooperating very closely with IEC on the basis of an agreement to harmonize their recommendations.

In the mechanical field a great number and variety of standards have been developed. The movement originated with company standards about 30 years ago and then was channeled into the Royal Institute of Engineers and the Society for Encouragement of Industry. We can only give here some examples concerning accessories for water-supply, tools, and drawings.

The Royal Metal Industries, W. J. Stokvis, Ltd., Arnhem, writes:

The multitude of types of stop- and bib-cocks on the Netherlands market brought about the usual disadvantages—multiple stocks, lack of interchangeability, and either lack of spare parts or unnecessarily large stocks of parts. In addition, a considerable percentage were of inferior quality.

The standard design is based on good and proven practice and also ensures adherence to those dimensions which permit interchangeability both of the entire cock or of such parts as are likely to need replacement.

There is a series of stop-cocks, usually indicated by their capacity in English dimensions: $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$, and 2 inches. Their resistance is low. The $\frac{3}{4}$ in. cock, for instance, must pass 5 m3 (177 cu ft) per hour for a pressure loss of 5m (16.4 ft) water column.

The end connections are fully specified (there are a number of possibilities, but practice has shown that only a few are required in any numbers).

The general shape of the housing is left to the manufacturer.

The bib-cocks are designed on similar lines. Here, the distance between wall connection and outlet is fixed, but, again, the general shape of the cock is left free.

These cocks have meant a considerable improvement in the general situation. The manufacturers have longer runs and smaller stocks of many parts; the trade has smaller stocks; and the buyer has the advantage of getting a standard article, about the quality of which no dispute is possible.

The various standards are reviewed regularly. It has been found that nonstandard cocks of reasonable quality are imported at lower prices. The great advantage is that once a standard exists, the consequences of any one alteration can be predicted with reasonable certainty. Meanwhile, the advantage of international standards, especially for a small country such as ours, is obviously very great.

We have not mentioned standardization of all kinds of fittings: couplings, T-pieces, wall fittings, etc. This work has gone forward with much success and practically all fittings used are of standard design. The situation in which any body made or used just about anything has become unthinkable to present-day manufacturers and users. The result in savings in manufacturing costs and

stocks would be difficult to estimate.

The Iron Foundries—De Etna Ltd. Breda, have written:

As manufacturers of standardized cast iron flushing cisterns for water-closets, we are glad to comply with your request to furnish you with some details concerning standardization, its application, etc.

Some 30 years ago, the situation with regard to flushing cisterns was chaotic, owing to the number of different models and the regulations they had to meet.

It has been our aim to put *one* type on the market, which would be efficient and meet the requirements of the authorities. In this respect we have succeeded, although some users continue to resist. About 1926 standardization was put into effect. This provides the assurance that after a thorough examination by experts the right model is being chosen. We were pleased to find that the cistern thus designed was almost the same model as the one already put on the market by us.

The advantages of this standardization are numerous. The problem of maintaining various patterns of cast-iron parts belongs to the past. This is also true in respect to parts that can be obtained from dealers. On ordering, one has simply to refer to the standard in question. As to changing the standard, this only happens after serious consideration and over a long period. Factory-made parts supplied by others can be produced and ordered in large quantities. This keeps the cost of production low. In case of disputes regarding construction or differences of size, or both, one can refer to the standard. Prospective buyers have an advantage in that they can conform to the proposed construction and size, while on repeat orders it is sufficient merely to mention a number.

The Municipal Waterworks. The usefulness of standardization has been clearly proved in practice. It was expressly shown during the period 1942 through 1947 when various manufacturers deviated from standards due to practical difficulties. As a consequence, the quality of many products in our dominion fell considerably during that time. We are glad to state that this period is now over.

If there were no standards, the community would become inefficient because of individual requirements, noninterchangeability, etc. The manufacture of parts at different places would be impossible. It must be recognized, however, that there may be objections to the immediate introduction of standards for exclusive use in a business with an extensive and valuable material investment. Voluntary standardization, and gradual application, is the only way out.

A talking point for standardization from the viewpoint of users is the reliability of recommendations embodied in standards, based on thorough investigation and experience. The standards should be limited to essential data, permitting future improvements. We especially welcome the growing trend toward international standardization, which we consider to be urgently necessary.

The purchasing department obtains steady returns in the form of economies by referring to standards. Testing is carried out according to standard requirements and methods. Correspondence is limited to a minimum, and misunderstandings are prevented. For Waterworks there is a special advantage. The rules for installations have been standardized and these rules refer to standard materials. This facilitates inspection; also, the training of personnel is easier. Pipes and fittings made in accordance with standards are of reasonable quality. Loss of pressure and waste of water

(*Continued on page* 92)

Economic Cooperation Administration

Modern twin-engine jet planes now being produced in the Netherlands are the result of co-operation among various countries. The original design is British; the Rolls-Royce engines are built under license in Belgium; aluminum is imported from Canada; and air frames and final assembly are done in Holland.

Safety Standards and Codes—What Do They Mean?

By A. C. Blackman

Chief, Division of Industrial Safety,
Department of Industrial Relations, State of California

FREQUENTLY we are told that certain guards or equipment are up to "standard" or that a particular structure is not up to the "code."

The two words "standards" and "code" are so frequently used interchangeably that it might be well to clarify their meanings and to note how they apply to safety problems.

Thus a "standard" is defined as a criterion established by custom as a model to copy, or a measure of high quality to be attained, or a level or degree to be sought after. A standard is definitely a yardstick with which to measure the quality or quantity of some tangible or concrete thing—such as the standards for electric wire.

A "code" is defined as a systematic body of law, especially one given statutory force; a system of principles, rules, and regulations put forth in formal statement, such as the medical code governing the medical profession.

While a code may include many established standards, it can also include intangible principles basic to an operation or industry. We, in accident prevention work, are familiar with the American Standards Association (ASA) and its various sets of safety standards. They are the ones most frequently referred to. They are arrived at and published in final form only after exhaustive studies and intensive consideration by known authorities. The meticulous care with which these American Standards are established is too well known to need elaboration here.

As applied to safety, the two words "standards" and "codes" should not be confused. On the one hand, "standards" are models or goals established by custom to be striven for. On the other, a "code" is a law relating to one subject—a basic principle which must be obeyed. Whenever a standard and a code are synonymous or identical then it becomes a good or model law. All good safety laws should be built up on accepted safety standards.

The question naturally arises: what are "safe standards" and what is "safety"?

As we all know, "safety" is defined as "freedom from danger," and "safe" as "free from harm or risk." Safety is the opposite of danger, harm, or risk. The two opposites cannot exist in one and the same place.

Therefore a safety standard can be defined as a model or criterion of that which maintains a state of freedom from danger, harm, or risk. Since standards deal with tangible, physical things that can be seen, felt, and measured, then safety standards insure such things as the "safe" thickness of boiler plate or the "safe" speed of abrasive wheels.

Safety codes, covering principles of industrial activity, deal in the intangibles of human behavior. The best example of this is our Labor Code which, among other things, insures the general principle of "safe employment and places of employment."

Both "standards" and "codes" are combined laws such as our California Safety Orders which insure a sufficiency of illumination and ventilation in working places, the safe stacking of barrels, and the protection of the operator of a machine at the point-of-operation.

Since conditions in industrial processes change continually, so must their safeguarding. Change does not always mean progress, but progress always entails change. Realistically this means that safety engineers are faced with the obligation of keeping abreast of changes in industrial processes and of anticipating these changes with improved standards of safety.

As our safety standards improve, so will our safety codes. With both standards and codes made effective and well integrated, injury frequencies and severity will decrease, and safety engineering will become a science as well as a profession.

Reprinted from *California Safety News*, December 1951.

A New Safety Project

ACCIDENTS to printing plant employees have been happening too frequently, causing needless suffering to the employee and his family, as well as unnecessary expense and disruption of operations to the employer. This is the reason for initiation of a new safety project on signaling devices and controls for graphic arts equipment under the procedure of the American Standards Association. The new project is to be known as B65. The Research and Engineering Council of the Graphic Arts Industry has been invited to act as sponsor.

The project was authorized by the American Standards Association on the recommendation of a general conference. Book manufacturers, printing employers, the pressmen's union, electrical equipment manufacturers, the National Safety Council, and the Research and Engineering Council of the industry were represented.

The accident problem in the printing industry is indicated in New Jersey's report for 1950. The report for this one state shows 8 amputations, 215 permanent partial disabilities, 128 temporary disabilities, and a compensation cost of $135,813.

(*Continued on page* 92)

Graphs, graphs, and more graphs attest the efforts of our times. More effective than tables, far more so than words, they depict with precision, clarity, and force those innumerable relationships which keep emerging as today's hard won grist for tomorrow's mill. Many standards for effective communication by medium of the published graph are now accepted, either as eminently sensible procedures or as the siftings of wide usage. Some of these are broadly defined, some sharply, but they all tend to contribute a smoothness of presentation, an ease of assimilation, usually regarded as desirable.

Mid-Century Standards for Published Graphs

by Douglas P. Adams

Professor Adams is Associate Professor of Graphics, Massachusetts Institute of Technology, and is chairman of ASA Sectional Committee on Preferred Practice for the Preparation of Graphs, Charts, and Other Technical Illustrations, Y15. This committee works under the sponsorship of the American Society of Mechanical Engineers.

THE American Standards Association Sectional Committee Y15 (formerly Z15) has been concerned with engineering and scientific charts for lantern slides, engineering and scientific graphs for publications, and time series charts. These standards had been formally revised in 1932, 1938, and 1942 respectively.

Public demand for further careful revision and wide publication has been great.

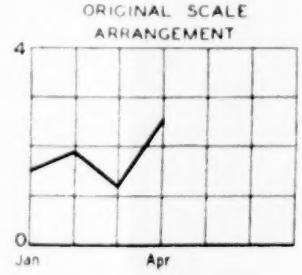
In the case of lantern slides, for instance, it was so great that other agencies had actually undertaken various aspects of the task. The best known authority on lantern slides design was L. S. Bonnell, Standard Oil Development Company, who agreed to become chairman of this subcommittee. The field of Engineering and Scientific Graphs for Publications was fortunate in getting as its chairman Miss Ruth F. Bryans, Publications Manager for the prolific American Institute of Physics. Kenneth W. Haemer, American Telephone and Telegraph Company, an experienced standards expert in this field, agreed to shepherd the Time Series revision. Extensive questionnaires were sent out in an effort to update the basic material and to ferret out new points of view.

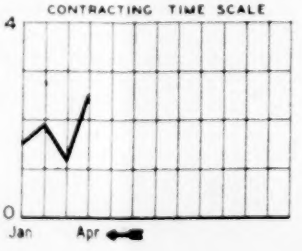
It finally became clear that standards for lantern slides and those for publications could no longer be treated with complete independence; graphs made for the one purpose all too frequently were called upon also for the other. Supporting figures which may be of interest show that 88 percent of the respondents reproduce their lantern slide originals in printed publications and nearly half publish from 50 percent to 100 percent of their copy. Identifying the field polled, 85 percent were engaged in scientific pursuits, 15 percent in clearly identified business enterprises; 39 percent were in the field of education (principally in colleges), 18 percent and 21 percent, respectively, represented medical and agricultural pursuits.

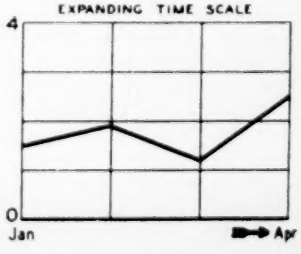
A merged standard has been the verdict, reluctantly but unanimously accepted by the two subcommittees.

This merger implied, however, that if the new standard were not to be too large, a substantial portion of the fascinating, exploratory results already unearthed would have to be abbreviated or possibly omitted. Such de-emphasis may appropriately spell out the scope of a brand new standard, though not one in the graphical field covered by this article. Strangely enough, it had been found, for instance, that auditorium conditions presently encountered appear to be about 50 percent more severe than those existing in 1932 when the American Standard on Lantern Slides was last revised.

Further studies which would presumably interest every enterprising projectionist were on the use of color, slide requirements for micro-photog-



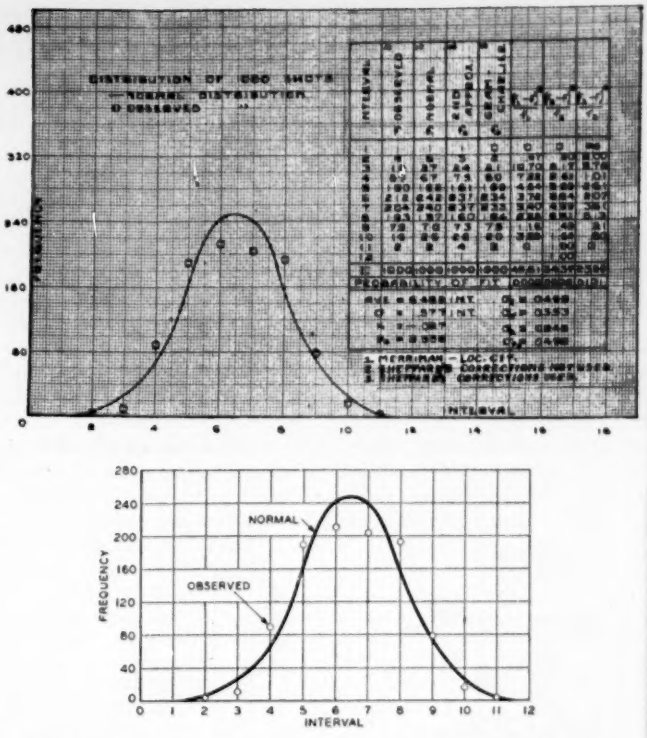




raphy, sizes and shapes of slides, sizes and shapes of masks, the use of hand copy, and the complicated requirements for presentation of three-dimensional (stereoscopic) images. Although half of the total users polled did employ such photographs or micrographs or were otherwise interested in the latter topics, 76 percent of the general subject matter of their slides still consisted of graphs and drawings, with 61 percent also using tabular material. All figures thus indicated the desirability of a merged standard.

In the new single standard it is proposed to use appendices to present some of the supporting and explanatory material which cannot be given in full in the body of the text. It is hoped especially that the final product will prove handier and more readable than its predecessors. In the merger as presently planned, the broad scope and general content of each standard will not be profoundly altered.

Questionnaires sent out by Mr. Haemer for Time Series Charts showed a strong appreciation of most of the broad substance of the old standard but expressed a hope that illustrative material would be rendered more effective, readability improved, and utility increased. Since the original manual was prepared, respondents allege that a good many details of practice have steadily changed and that the calibre of the audience to which Time Series Charts are presented has made it necessary to have them easier to understand.

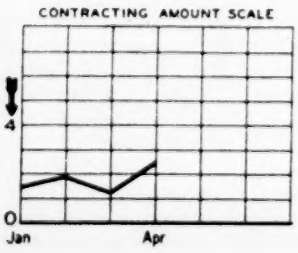


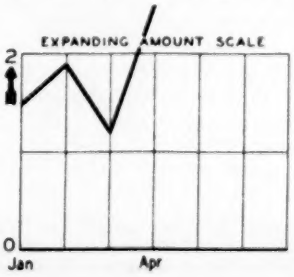
In the top figure too much information is given. The graph is not easily read and occupies more space than is necessary. Below it the same graph appears simplified by removal of fine grid lines, table and caption. This illustration appears in American Standard Z15.3-1943.

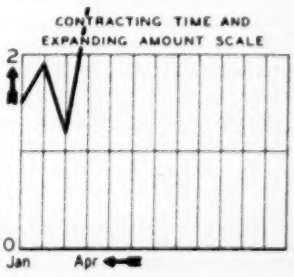
The use of an extensive index for both standards has been carefully considered, although indexes were not previously used. That they are an aid in cross-reference was agreed upon, and the possibility that the technical substance of most references could be included with each entry found general favor. ASA numbering systems could be especially helpful here, but Mr Haemer wisely advised the sectional committee against allowing the indexing to introduce an undesirable degree of formality and stiffness. His comment probably highlights the point of view of the present sectional committee, namely, that each reference to a standard should be an enjoyable as well as a rewarding experience.

The sectional committee hopes to meet the demands of the consensus thus placed upon it and to present the new standards in 1952.

Scale selection is an important feature in the design and construction of time-series charts covered in American Standard Z15.2-1938.





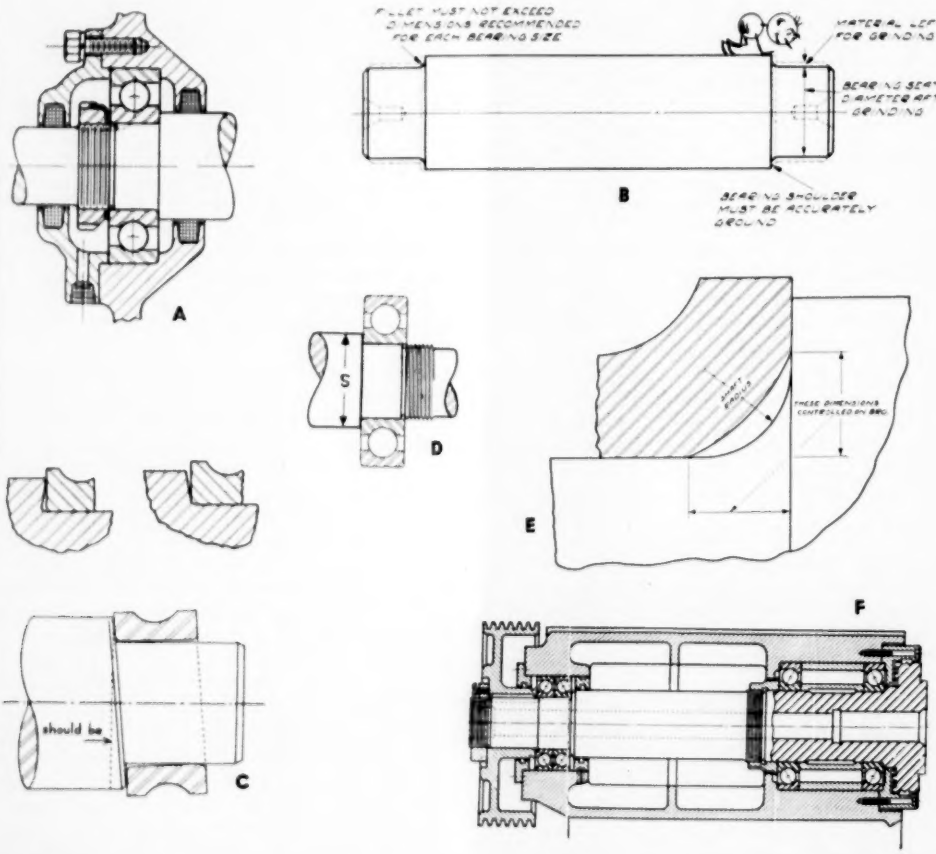


A New Program for Ball and Roller Bearings

by C. E. Morse
Standards Engineer, Marlin-Rockwell Corporation

IN his article, "Why Standards for Ball and Roller Bearings?" (STDZN, p 220, July, 1951), V. L. Barr pointed to the fact that more than 250 million bearings and more than 18,000 various types and sizes are produced in the United States each year. Practically every piece of mechanical equipment in every industry uses ball and roller bearings. Vast progress has been made in all kinds of machinery in the past few years, with the result that there has been a consequent demand for bearings of greater capacity; of lighter construction; bearings to operate at higher speeds; bearings of extremely low friction and noise; sealed bearings, and many others.

As Director of Engineering of the Roller Bearing Company of America Mr Barr was well qualified to speak of the problems of the anti-friction bearing industry. As chairman of



These illustrations are reproduced from a series of bulletins "Ball Bearing Practices for the Shop Man," published by the Marlin-Rockwell Corporation, Jamestown, N. Y. Bulletin No. 8 on "Grinding Procedure for Shaft Shoulders and Bearing Seats" was prepared with the assistance of The Carborundum Co, Niagara Falls, N. Y.; Cincinnati Milling Machine and Cincinnati Grinders, Inc, Cincinnati, Ohio; Norton Co, Worcester, Mass.

ASA Sectional Committee, B3, on Ball and Roller Bearings, he was equally well qualified to discuss the standardization program that is well under way in this committee.

One of the problems Mr Barr mentions is that of bearing mountings. It has long been recognized by bearing engineers that, for a successful antifriction bearing application, not only the proper bearing, but also the proper mounting of that bearing is essential. This is borne out by the fact that, in a great many instances, analysis of the cause of bearing failures has led to the conclusion that improper mounting practices have played a major role in bringing about those failures. With this in mind, bearing engineers have felt obligated, not only to standardize on the bearings themselves in order to promote interchangeability, but also to recommend good mounting practices for the benefit of the user.

About the middle of 1933, a group of engineers, the Annular Bearing Engineers' Committee (ABEC) of the Antifriction Bearing Manufacturers' Association (AFBMA), now a member of the American Standards Association, commenced work on the tabulation of recommended shaft and housing fitting practices for annular ball bearings. Prior to that time, each individual bearing manufacturer had his own tables of recommended fits, and a review of these several tables revealed surprisingly close agreement. Therefore, after a thorough study and considerable "give and take" on the part of the various company engineers, a series

Anti-Friction Bearing Mfg Assn, Inc.

Ball bearings vary in size as they do in use, from tiny balls, to the huge balls used in public utility dynamos.

of tables of recommended shaft bearing seat diameters and housing bearing seat diameters for annular ball bearings was developed and published. Likewise, similar tables were developed by the AFBMA Roller Bearing Engineers' Committee (RB EC) for the mounting of tapered roller bearings.

Early in 1936, the ABEC undertook to draw up recommendations covering the proper sizes of shaft and housing shoulders, and later the RBEC performed the same task for cylindrical roller bearings and tapered roller bearings. These also have been published by the AFBMA.

These tables of recommended fits and recommended shoulders were submitted to ASA for approval as an American Standard, and, in accordance with ASA procedure, were referred to ASA Sectional Committee B3 for review and recommendation. With some slight revisions, Committee B3 approved the AFBMA Standard and American Standard B3.8-1951. Bearing Mountings for Ball and Roller Bearings is now being published. Tables 1 to 5, inclusive, of this standard cover shoulder diameter recommendations for annular ball bearings, cylindrical roller bearings, and tapered roller bearings. In the appendix to this standard are found nine tables covering shaft and housing fitting recommendations for annular ball bearings and tapered roller bearings.

In explanation of the tables on shaft shoulder diameters, it should be said that the minimum shaft shoulder diameter is determined by the minimum shaft shoulder height which will, when the bearing inner ring is seated against it, provide adequate flat surface beyond the bearing corner to square the bearing properly on the shaft and also to support light thrust loads which may be imposed on the shoulder. Heavy thrust loads may need higher shoulders and consequently larger shaft shoulder diameters than those in the tables.

To emphasize the importance of proper shoulders, let us consider the results of many years of examining the causes of bearing failures. One of the most frequent causes is that the bearing is not square with the shaft. When the bearing is operated under this condition, it usually results in failure of the bearing cage due to the severe strains imposed upon it by the rotation of the inner ring in a plane not parallel with the plane of the outer ring. As a further precau-

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Left: (A) A ball bearing housing has three purposes: (1) to provide an adequate supporting surface for radial or thrust loads, or a combination of both; (2) to protect the bearing from dirt or foreign matter; (3) to provide an adequate reservoir for sufficient lubricant and prevent leakage. The sketch shows a housing which is integral with a machine frame and has one shoulder. (B) Efficient application of ball bearings is largely dependent on accuracy in grinding the bearing seat and shaft shoulder. This sketch shows material to be ground off the shaft to form finished shaft shoulders and seats for the ball bearings. (C) A shaft shoulder is depended upon to square up the bearing mounted on the shaft. Therefore, the side of the grinding wheel forming the shoulder must be kept square. If not, tapered shoulders will result as shown here, together with the distortion of the inner ring caused by an "off-square" shoulder. (D) The size of the shaft shoulder is important. The amount of thrust against the shoulder determines the proper shoulder height, giving a sufficient area of support for the inner ring of the bearing. However, the shoulder should not be too high. Where removal of the bearing from the shaft may be necessary, the inner ring should project beyond the shaft shoulder to permit a pulling tool to exert pressure against it. (E) The cross-hatched portion in the above sketch is the inner ring of the bearing. Its corner is rounded with a radius which is larger than the radius of the shaft fillet, to prevent interference in assembly. (F) In this application of two duplex bearings to a large grinder workhead spindle, the bearings are mounted back-to-back to minimize the deflection of the relatively long spindle.

tion, it is important that the plane of the flat surface of the shoulder is square with the shaft bearing seat.

The maximum housing shoulder diameter is determined in the same manner as previously explained for the shaft shoulder diameter, in that the maximum housing shoulder diameter is based upon the minimum permissible shoulder height. The same principles regarding shoulder surface and shoulder squareness that apply to the housing also apply to the shaft. Proper attention to shoulders can result in longer bearing life and, consequently, more satisfactory bearing performance. Also, it should be mentioned that the higher the operating speed, the greater the importance of shoulder squareness and trueness.

As has been mentioned, the nine tables in the appendix of American Standard B3.8—1951 cover shaft and housing fitting practice recommendations. An examination of the tables will reveal that, for annular ball bearings, there are given recommended shaft bearing seat diameters and housing bearing seat diameters for the four classes of bearing tolerances given in American Standard B3.5—1951, Tolerances for Ball and Roller Bearings, namely ABEC-1, -3, -5 and -7. Also, different recommendations are made for different operating conditions, such as shaft rotating with relation to direction of load, shaft stationary with relation to direction of load, etc.

Bearing in mind that assembly conditions usually make it impossible to make both inner ring and outer ring equally tight on shaft and in the housing, respectively, the usual practice is to fit more tightly on the shaft or in the housing, that bearing member (inner ring or outer ring) which rotates in relation to the direction of the load. Another principle affecting the degree of fit is that a heavier load requires a tighter fit. It is obvious that sometimes a compromise has to be made between the requirements just mentioned in order to meet specific application conditions. In such cases it is necessary to use good judgment, and is also advisable to consult, if possible, an experienced bearing engineer.

With regard to the finish of the bearing seat, it is preferable to have a good ground finish, or at least a very smooth turned finish.

In order to understand the basis upon which the various shaft and housing diameters were established, it should be borne in mind that working tolerances are just as necessary for the shafts and housings as for the bearings themselves. The principle followed in setting up maximum and minimum shaft and housing bearing seat diameters, was to place the shaft or housing tolerances in such a position in relation to the corresponding bearing tolerances that the desired average fit would be obtained.

In January of 1933, a subcommittee of the AFBMA's ABEC and RBEC undertook to standardize the locknuts and lockwashers commonly used with ball and roller bearings. Also, early in 1947, this same subcommittee took steps to standardize the tapered adapter sleeves used for locating bearings on shafts when shaft shoulders are not available. Both these projects were completed and have been published by the AFBMA.

As in the case of recommended practices for fits and shoulder heights, these tabulations of locknuts, lockwashers, and adapter sleeves were submitted to ASA. Again, ASA Sectional Committee B3 approved this material with only slight revisions and American Standard B3.9—1951, Ball and Roller Bearing Mounting Accessories, has been approved and is being published.

The advantage of standardizing these mounting accessories is an increase in simplicity and interchangeability of bearing mountings. Also, as is the case with all standard articles, they become more readily available to the bearing user.

In conclusion, it is the hope and desire of those who have worked on these standards, and of ASA, that bearing users will take full advantage of these new standards to the end that even greater efficiency may be attained in this "anti-friction bearing age."

This roller bearing is being assembled into its mounting in a railroad journalbox.

Anti-Friction Bearing Mfg Assn, Inc

How Do You Measure Rentable Areas?

The Magazine of Building Management

THE September 1951 issue of *Buildings* tells the following story: "A young building manager, in studying records of his building, found that during the past 20 years the building had been under the direction of four different managers, and each had measured the rentable space in the office areas by a different method. The different methods of measurement naturally produced different rentable area totals, with the end result that the building had lost several thousand dollars over the years."

As a general rule, business firms leasing offices, lofts, or other commercial space agree to pay a rental of so many dollars times the square feet to be occupied. Unfortunately, however, there is no uniform method by which this area is measured.

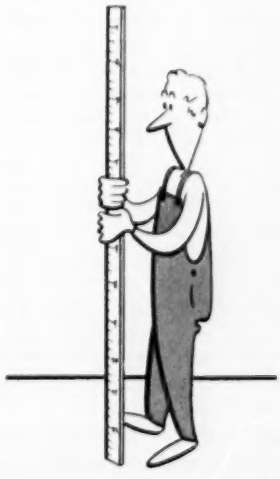
This is why the American Standards Association has authorized a new project for development of a standard method of measuring rentable and usable areas in buildings. At present it is planned only to consider commercial and industrial buildings and schools. However, at least one municipality has indicated its interest in the project as applied to public buildings.

The problem was taken up by ASA at the suggestion of the American Institute of Architects. The Institute issued a standard method of calculating the cubic contents of a building in 1948. It wanted a corresponding method for calculating square foot and rentable area. If indicated on building plans, this would be of value to real estate renting agents and those determining mortgage loan values, the Institute explained.

A number of standard methods are now in use. The National Association of Building Owners and Managers issued a standard as early as 1915. This method, in conjunction with a standard accounting system, is used in connection with the Association's annual study of operating results, calculated on a square foot basis. Another standard method was agreed upon by the Real Estate Board of New York in the late '20s.

The young man mentioned in the first paragraph of this article took his problem to the editor of the magazine, *Buildings*. He asked them the question "what is the proper way to measure rentable area in office space?"

The editors looked into the problem. They asked the question of 26 men in all parts of the country. Nine of the 26 indicated their preference for the method recommended by the National Association of Building Owners and Managers. The second most popular method was that of the Real Estate Board of New York.



Two Standard Methods of Floor Measurement

National Association of Building Owners and Managers

Office Areas. Determine upon a typical plan that will permit the floor being sub-divided to accommodate ordinary tenants, laying out corridors that will reach every reasonable subdivision. To determine the number of square feet of rentable area on a floor, measure from the plaster surface of outer building walls to the plaster surface of corridor and other permanent partitions.

To determine the number of square feet in a rentable area, measure from the plaster surface of outer building walls and from the plaster surface of corridor and other permanent partitions that separate the premises from adjoining rentable area. No deduction should be made for columns or projections necessary to the building.

Real Estate Board of New York

Entire Floors. Areas of entire floors shall be computed by measuring from the inside plaster surface of all exterior walls of space used by the tenant on the floor, including columns and corridors, but excluding toilets, porters' closets, slop sinks, elevator shafts, stairs, fire towers, vents, pipe shafts, meter closets, flues, stacks, and any vertical shafts and their enclosing walls. No deductions should be made for columns, pilasters or projections necessary to the building.

Divided Floors. Areas of individual offices or divided floors shall be computed by measuring from the inside plaster surface of the exterior walls to the plaster surface of the corridor side of corridor partition and from the center of partitions that separate the premises from adjoining rentable area, no deductions being made for columns, pilasters, etc. Permanent partitions enclosing toilets, porters' closets, etc. have the same relation to rentable area as do outer building walls.

Another method (see diagram 3) ranked third. The editors then studied 15 buildings in a city in the Southwest. Five different systems were in use in the 15 buildings. Six followed the NABOM method, six the method described in diagram 4, and one building each used the method in diagrams 2 (the REBNY method), 5, and 6.

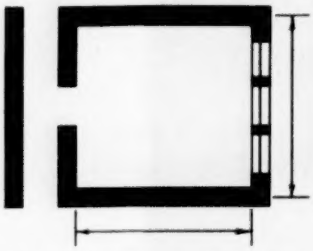
One point where variation occurs is in deciding whether to measure the usable area of a building from the inside or outside of the plaster surface of the exterior wall. The question also arises whether to measure from the outside, inside, or center of interior partitions. Should the measurement include corridors and columns? It is conceivable that a company might rent as a unit the floor that formerly had been broken up into small offices. Partitions would be torn down and corridors eliminated. Formerly the space they occupied might have been counted as nonrentable and nonusable space; now they would be included in the client's usable office space. In some cases, a firm pays rent on the basis of unobstructed, usable office quarters; in others, it pays on the basis of a certain amount per square foot regardless of whether that footage contains obstructions, such as closets for cleaning equipment and electrical connections.

School administrators are faced with a difficult problem in trying to calculate how many square feet of a building is usable for educational purposes. Present methods of calculating gross area vary considerably, particularly in calculating areas in open corridors and passageways. These are usable all year in some sections of the country where the climate is relatively mild; however, in parts of the country where the winter is severe it is not customary to consider corridors and passageways as usable areas. The modern trend in school design is to include a great deal of built-in cabinet space. This is undeniably usable, but it may or may not be considered part of the net usable floor area.

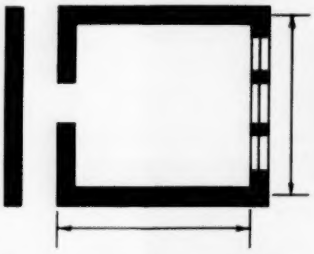
Before deciding to authorize the

(*Continued on page 92*)

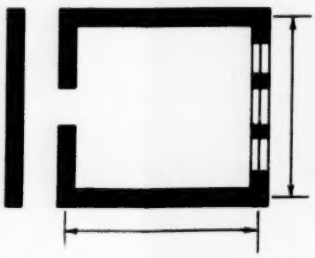
No. 1—The NABOM method—measures from the inside of the outside wall to the inside of the corridor wall, and from the center point of the separating partitions



No. 2—The REBNY method—measures from inside of outside wall to the corridor side of the corridor wall, and from the center points of separating partitions

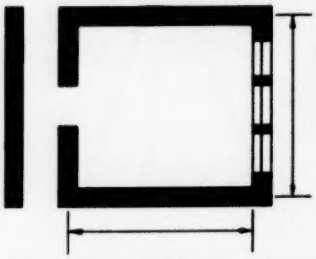


No. 3—Measures from the glass line of the outside wall to the center point of the corridor wall, and from the center points of inside separating partitions

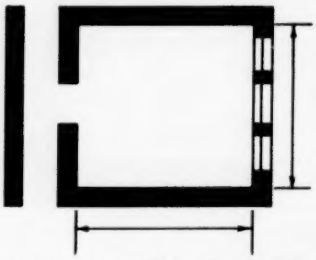


No. 4—Measures area enclosed by the four walls, then adds two to six inches to each dimension. Government permits two-inch addition beyond plaster lines

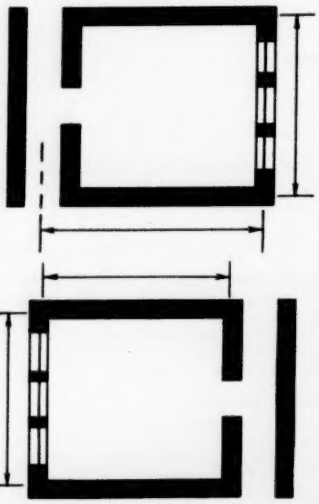
No. 5—Measures from the inside of the outside wall to the center point of the corridor wall, and from the center point of one separating partition to the other



No. 6—Measures from the inside of outside wall to the inside of corridor wall, and from inside of one separating partition to the inside of the opposite one



No. 7—Measures from the glass line of the outside wall to the midpoint of the corridor itself, and from the center point of the inside separating partitions



How to Charge Unusual Injuries

THE following interpretations have been handed down by the Committee of Judges of ASA Sectional Committee Z16 on accident statistics. They serve as a guide to companies who want to know how to count injuries due to unusual accidents in their safety record.

The American Standard Method of Compiling Industrial Injury Rates, Z16.1-1945, offers generally accepted rules for keeping track of a company's safety record. Monthly compilation of a company's accident toll shows at a glance when some change in operations or some unforeseen new hazard has caused a jump in the injury rate. Immediate action then can be taken to eliminate the hazard.

Safety engineers are invited to obtain interpretations of the standard by sending the facts on doubtful cases to the American Standards Association. Reprints of all the published decisions can be obtained from ASA.

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CASE 149. A question was asked as to how many disabilities should be charged for this case. The case history is lifted from the employee's story to the compensation adjuster.

"On or about May 29, while working, I suffered an injury to my back in the following manner and under the following circumstances: While operating an expander discharge valve on the expander, I was in the process of turning the valve wheel and as I tried to pull on the wheel I felt a pulling sensation horizontally across my back about two or three inches above my belt line. Nothing struck my back. This sensation was caused by the strain. I think this strain was caused by, or partly caused by, the fact that I was in a hurry to get the valve open due to an operating failure. When the sensation was felt I immediately stopped opening the valve and another employee completed the job. I continued working for about 4 days, then reported to the First Aid Room. I was sent to the company doctor who confined me to bed for a week. On June 6, I returned to my regular duties and continued until July 15. On this date I suffered no additional injury to my back but the same pain in the same location as I suffered on May 29 returned. I, again, reported to the company doctor who confined me to my bed until August 10, at which time I returned to my regular job."

This employee was given a pre-employment physical examination on January 9, at which time he reported to the examining doctor that he had had no serious illness nor serious injury. However, on the report to the adjuster from which the above statement was taken, the employee stated: "that about a year ago, he jumped across a ditch causing an injury that was diagnosed as a broken vertebra and displaced disk in the right low back. Given a pantopaque study of the spinal cord and was subsequently treated with a Williams type body plaster. He went on to full functional recovery."

In accordance with the facts presented, the committee agreed that the case should be considered as one industrial injury on May 29, and that the time charge should be the actual number of days lost because of the injury on that date. In commenting on this case, one of the members of the committee observed that the company specifically stated that there was no additional injury to this employee's back on July 15; therefore, no additional injury should be reported for that date. Some of the members have also commented that the counting of this case is in no way changed because of the injury which this employee may have had before he came to work for this company.

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CASE 150. The head loader of the shipping department was standing on the loading platform talking to a truck driver concerning the unloading of a truck. At the same time several other employees of the shipping department were also on the platform tossing a paper ball between them. This was a rather large but improvised ball made of wrapping paper and weighing one-quarter pound. While the head loader was talking to the truck driver, the paper ball got away from the other employees and struck his left ear. Shortly thereafter he noted that he was unable to hear in his left ear and a competent specialist made the diagnosis of perforated eardrum of recent origin. This physician stated that the blow by the paper ball could have caused the injury.

Pre-employment physical examination showed that he had defective hearing in both ears (20/5).

The two questions placed before the committee were:

(*a*) As this employee was the innocent victim of horseplay by fellow employees, is his injury chargeable, and

(*b*) If so, to what extent is his previously detected hearing deficiency a mitigating factor?

The committee decided:

(*a*) This injury should be considered as chargeable in the industrial rates, and has referred to paragraph 2.4 of the standard; and

(*b*) The previously detected hearing deficiency of this employee is not a mitigating factor. It called attention to paragraph 3.3.1 of the standard as the basis for this decision. One of the committee members remarked that in some cases a perforated eardrum may heal and this employee may, therefore, possibly regain part of his hearing loss. It would appear, therefore, that the proper time charge for this injury would be in accordance with the eventual extent of hearing loss, as determined by medical opinion.

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CASE 151. An employee of a chemical company was helping to break up clinkers in a gas producer. This operation involved driving a tapered 1½ inch steel bar through the clinker with an 8-lb mall. The bar became bent due to the heat and the employee used the mall to straighten the bar after it had been withdrawn from the gas producer. He struck the bar four or five times to straighten the kinks while a second employee turned the bar. When he did not strike the bar again, the second employee turned and saw the man topple over.

A first aid crew was notified and within approximately ten minutes they were administering oxygen to the victim; however, they were unable to revive him. The coroner reported that the employee died of a heart attack as there was no evidence that the fall caused him any injury. This employee had been given a physical examination the previous month and the doctor had reported that he was capable of performing any work necessary to the plant. Although the operation at the time of injury was not routine, it had been performed thousands of times in that and other plants without injury.

Following the company's report on this case, the committee asked for more information. In reply, the company sent a copy of the coroner's report, which gave the probable cause of death as acute coronary occlusion.

The committee agreed that this was a borderline case. After considerable discussion, it decided that this case should be included in the industrial injury rates as a fatality. The members believed that this employee's exertion in the use of the 8-lb mall had, to some degree, aggravated the heart condition which caused the death.

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CASE 152. A statistical agency wrote:

"In our survey of work injuries, the following case has come to our attention: 'Lacerated wound of perineum, including amputation of left testis.'

"Our questions are: (1) Should this case be counted as a permanent disability? (2) If so, what should be the basis for determining the time charge?"

In discussing this case, the committee agreed that the injury definitely represented a loss of a part of a member, but medical opinion was presented that there would be no loss of function nor loss of earning capacity or working ability from

this injury. It was recognized that when the Z16 Committee had prepared the 1945 revision of the standard such a case had not been contemplated. It was also recalled that 3.3.2 of the standard lists certain specific injuries which should not be classified as permanent partial disabilities, including, among others, loss of fingernails, toe nails, or teeth, or disfigurement.

The committee decided that the case in question was most nearly analogous to 3.3.2 of the standard which defines cases that should not be considered as disabilities. On the basis of this section, such cases should not be classified as permanent partial disabilities but should be classified in accordance with the actual number of days lost in each case.

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CASE 153. The company involved had a first aid station under the supervision of a doctor but this was not equipped with such facilities as diathermy, hydrotherapy, etc. An employee strained his back. In the opinion of the company doctor this was not a disabling injury and the employee was returned to light work. The doctor felt, however, that the employee's recovery could be expedited by visiting an orthopedic surgeon where he could receive further treatment, if necessary. Because there were no local facilities, it was necessary to send the employee to a neighboring town for these treatments. The employee was perfectly capable of travelling back and forth to the orthopedic surgeon's office even though this involved much more effort than had he remained at light work. Because of the distance involved and the waiting time in the doctor's office, most of the employee's time was charged as "injury time." The fact remained, however, that the employee was able to perform light work at the plant and was returned to light work by the orthopedic surgeon.

The company did not believe that it was fair to charge this as an industrial injury because the time lost was solely in the interest of insuring a more speedy recovery to the employee.

The committee decided that this case should not be included in the industrial injury rates. It arrived at this decision on the basis that the company had stated that the injured employee did not lose a full day's work while travelling back and forth to the doctor's office. This decision, therefore, would not hold if the employee had lost a complete shift while going to some other location to obtain proper medical treatment. One of the members also commented that he did not believe the limited facilities of the first aid room should be considered a reason for not charging the case, since such facilities vary widely throughout industry.

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CASE 154. An employee in a soybean plant had been cleaning out an oil stripper by washing it with a caustic solution. After this operation was over, in reconnecting two of the flange connections on some pipe a tool slipped and the flanges snapped together, splashing some of the liquid in the employee's eye. The employee was given first aid at the plant and taken to a local doctor. The doctor felt that this employee should be referred to an eye specialist. After receiving further first aid, the employee was driven 48 miles through a blinding blizzard, bucking snow drifts, wind, and cold, to get to an eye specialist. The eye specialist met the injured man and his companion about 6 P.M. at a hospital and put the man to bed. This happened to be a Friday evening. The next morning the eye specialist said the employee was all right but he wanted to continue treating the eye until Sunday or Monday. He suggested that the man stay right there in the hospital since it was practically impossible to get back and forth because of the storm. The employee did get back to work Monday but he still had to make trips to the eye doctor several times a week.

The doctor said there would be no permanent disability and that if the man had been in the same town with the eye specialist, he would have continued working; due to the conditions of the roads, however, the doctor had felt it was best for him to stay at the hospital for a couple of days. All the doctor wanted to do was check the eye once a day for awhile.

The company wanted to know whether this should be considered a lost-time injury.

The committee agreed that this also was a borderline case. It was finally decided that this case should be included in the industrial injury rates. Some of the members had been particularly influenced by the fact that this employee had actually spent two days in the hospital while under the treatment of the eye specialist.

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CASE 155. A company gave a detailed report of a hernia case and asked in what period of time the injury should be allocated in their accident statistics. The employee was a truck driver and over a period of 10 years had sustained a total of seven minor injuries, none of which had resulted in lost time. The hernia in question could not be traced back to any particular time or place. There had been no sudden disabling pain but instead a soreness gradually developed until it became so severe that the employee could not continue his work. The company submitted a complete report, giving complete information on all of the 7 injuries and a report of an investigating committee with regard to the hernia injury.

The committee decided that this injury should not be included in the industrial injury rates on the basis that the history of the hernia, as given, did not meet the requirements of paragraph 2.2 of the standard.

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CASE 156. An electric utility lineman was in the act of climbing a pole. When he reached a point about 15 feet above the ground, he stopped and looked above him. In this normal movement upward, he stated he felt a crick in the back of his neck. This fact was reported to his foreman. The employee continued to work for the remainder of the day but his neck continued to bother him. The employee lost two days from work as a result of this injury.

The company wished to know if a crick in the neck, arising from a normal body movement, should be considered a disabling injury and also whether or not it was in the realm of possibility for an aggressive industrial safety program to prevent such incidents.

The committee decided that this case should be included in the rates. This decision was based on the belief that while this condition might have happened to this worker at any place, the fact that it occurred on the job and that the act of looking up the pole was part of his work, placed it as an injury arising out of his employment.

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CASE 157. One April day a garage mechanic, in squatting down between two cars, struck his coccyx bone on the bumper of one of the cars. He reported this incident to his supervisor and a minor injury report form was filled out. The employee lost no time from work. Later that year, in November, the employee was leaning over doing some work and when he straightened up, he got a catch in his back. He stated he was not lifting but straightening up from a bent-over position. His back became sore and stiff, and the condition was reported to his employer, but the employee lost no time from work.

On the following March the employee again got a catch in his back while at work. He reported this to his supervisor and, because of the soreness, he was sent to the company doctor for an examination. The doctor reported that the employee's condition might possibly have been due to his work but he was not sure. The employee continued to work for awhile, undergoing heat treatment for several days, but eventually he was referred to a specialist. X-rays were taken and the employee was out of work for about three weeks. He then returned to light work with a temporary brace and eventually completely recovered.

The company wished to know if this should be considered an industrial injury.

The committee decided that this injury should be included in the rates on the basis that the lost time had been caused by an aggravation of the original injury, which arose out of employment.

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CASE 158. The injured employee, a firefighter, was assigned to duty at the watch desk of the fire station of a company. The employee sat at the watch desk, with his feet on the desk, and read a book. He took his feet off the desk, stood up, and fell. He then attempted to raise himself by use of his arms but again fell with one leg under him, as a result of which he sustained a sprained knee which disabled him for 6 days following. It was determined that his feet and legs had become numb (asleep) because of poor circulation of blood during the period he had his feet elevated on the desk.

It was acknowledged that the employee abandoned his position (with his feet on

the desk) in order to obtain a broom to sweep the floor, and it was determined that the employee had not been forbidden to read a book or to put his feet on the desk.

The employer contends that "this man let his feet go to sleep while he was sitting in a position which he had assumed for his own pleasure and comfort, and that the condition of his feet and legs which caused him to fall did not arise out of his employment." The employer further states that the employee "was required to be awake and on watch," and that "when he let his feet and legs go to sleep we think that he abandoned his employment for the time during which they were asleep and for this reason the injury did not occur during the course of employment." In addition, the employer interprets this case as being similar to Case No. 85, Decisions of the Z16 Committee of Judges, because (1) both principals were aware of their physical conditions preceding the accident, although the condition was only temporary in the present case and was chronic in Case No. 85; (2) both principals were intent upon doing something for the benefit of the employer at the time, and (3) it might be considered that both conditions were aggravated by physical activity.

The committee decided that this injury should be included in the injury rates. One of the members commented that in Case No. 85 the physical weakness which led to the injury was neither work connected with nor aggravated by any condition of employment and he therefore did not believe it should be considered as a precedent for this case.

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Case 159. On a construction project the worksites were located many miles from any housing community, in an isolated sage-brush flat. The entire plant area was fence-enclosed and under strict security control.

Although the company provided free bus transportation between the community and the distant plant locations, many employees preferred to drive their own vehicles over the same course.

Because of the time involved travelling to and from work, non-supervisory workers received "travel pay" as compensation; and this special allowance covered travel time not only to the project community but also extended to communities 10 to 15 miles beyond.

Construction craft workers were hired on the basis of day-to-day needs, and when no longer needed, were notified to terminate. The company was not required to give any advance notice to any worker, but did allow two hours work-pay on the day the notice of termination was given.

Termination procedure required the worker to obtain a work area "clearance" from several offices, after which he was required to go to the community-area personnel and payroll offices, and the medical examiner for final close-out. These offices were located in or near the community, many miles away from the work area. The time spent enroute between points was designated as "termination-time" and pay was allowed for this period as an item differentiated from either work pay or travel pay.

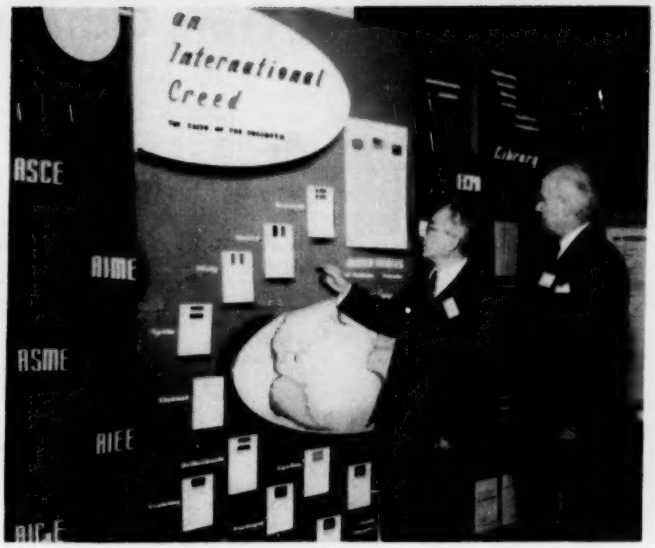
With these facts in mind, the actual event should be viewed:

In the early forenoon, two workers were notified to terminate on a reduction of force basis. One of these had driven his personally owned pickup truck to work that morning, and invited the other worker to ride with him while work-area clearances were obtained, and ride with him into the community area to complete termination procedure there.

Enroute between the work area and the community area, a tire blew out, the truck rolled in a shallow ditch, and both the driver and passenger sustained injuries.

The company asked whether or not either one or both of these injuries should be considered as industrial injuries.

The committee decided that these two employees were still in the course of their employment while travelling on "termination time" and therefore their injuries should be included as industrial injuries.



THE American Standards Association joined technical society members of the Engineers Joint Council in this exhibit at the Third National Conference of the United States National Commission for UNESCO, New York, January 27-31. The exhibit provided by ASA featured the June meetings of the International Organization for Standardization (see list of ISO Technical Committees in right background of picture). I. I. Rabi, left, and Ralph L. Goetzenberger of Washington, D. C., are here shown viewing a segment of the exhibit. Mr Goetzenberger represents the Joint Engineers Council on the U. S. National Commission of UNESCO. Dr Rabi of the Department of Physics, Columbia University, is the representative of the American Institute of Physics on the Commission.

"The Citizen and the United Nations" was the theme of the five-day conference, attended by some 2,200 delegates from all parts of the United States, as well as by observers from other countries.

Among subjects discussed were ways to improve citizen understanding and participation in world affairs; human rights and freedoms; problems related to economic and social security for all parts of the world; improvement of communication between nations and peoples, and educational, scientific, and cultural groups; technical assistance to underdeveloped areas, and improvement of world health.

Dr Luther H. Evans, Librarian of Congress, was elected chairman of the U. S. National Commission for UNESCO at the meeting of the Commission prior to the opening of the Third National Conference.

Standards From Other Countries

MEMBERS of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. The titles of the standards are given here in English, but the documents themselves are in the language of the country from which they were received.

For the convenience of our readers, the standards are listed under their general UDC classifications.

003 Writing

AUSTRIA	ÖNORM
Mathematical symbols	A 6406
BELGIUM	**NBN**
Abbreviations for titles of periodicals	247
FRANCE	**NF**
Rules for writing numbers, units of measurement and symbols denoting values	X 02-005
Symbols used in the mechanics of fluids	X 02-105
RUMANIA	**STAS**
Symbols used in geometry	1646
SPAIN	**UNE**
Graphical symbols for reinforced concrete structures	24002
Conventional symbols for rivets and screws	1045
Symbols for marginal annotations	1049
SWEDEN	**SIS**
Graphical symbols for electrical power installations	1

621.3 Electrical Engineering

ARGENTINA	IRAM
Two-pole reversible plug and socket with grounding connection, industrial type	2074
Radio batteries: A, B, and C	4024
AUSTRALIA	**SAA**
Bare hard-drawn copper conductors (for overhead lines)	C 41-1950
Approval and test specification for non-flexible electric bed-warmers	C 148-1950
Approval and test specification for decorative lighting outfits (suitable for indoor use)	C 152-1950
Covered hard-drawn copper conductors (for overhead lines)	C 306-1950
Wiring rules, part 1-Wiring methods	CC 1, part 1-1950
AUSTRIA	**ÖNORM**
Small electric sign lamps	E 5500
Ceramic core for winding wire and tape resistors	E 6350
BELGIUM	**NBN**
Standard voltages and nominal current carrying capacities	46
Rules relative to paper insulated, lead sheated cables for telephone and signalization lines, industrial and private	146
Rules relative to small single-phase induction motors	251
Rules relative to small and medium three-phase induction motors	252
CANADA	**CSA**
Application of hydraulic remote control to farm tractors and trailing-type farm implements	B103.1-1951
Application of V-belt drives to agricultural equipment	B103.6-1951
Large incandescent tungsten lamps	C10-1951
FRANCE	**NF**
Series of 13 standards for radio components:	
Power transformers	C 98- 1
Loudspeaker, electrodynamic	C 98- 2
Fixed resistors	C 98- 3
Condensers electrolytic	C 98- 4
Potentiometers, variable	C 98- 5
Intermediate frequency transformers	C 98- 6
Radio tube sockets	C 98- 7
Switches	C 98- 8
Paper capacitors	C 98- 9
Variable capacitors	C 98-10
Mica adjustable capacitors	C 98-11
High voltage coils	C 98-12
Fixed mica capacitors	C 98-13
Eight provisory standards for explosion-proof material:	
Three-phase asynchronous squirrel cage motors. General	PN C 51-180
Receptacles, connectors, extensions. General rules	PN C 63-380
Receptacles, connectors, extensions. Characteristics of 16-amp model	PN C 63-381
Receptacles, connectors, extensions. Characteristics of 40-amp model	PN C 63-382
Receptacles, connectors, extensions. Characteristics of 125-amp model	PN C 63-383
Flanges of entrance boxes for flexible and semi-flexible cables	PN C 68-281
Entrance fixture for flexible cables. Dimensions	PN C 68-282
Entrance fixture for armored cables	PN C 68-381
GERMANY	**DIN**
Ventilators for transformers	42565
Dry rectifiers	41761
Overhead line insulators, ceramic, series 110, 150 and 220	48110, B1.2
Ceramic bushings	48034
Cable branching clamp	47671
Fixed and variable wire-wound resistors	41480-41482
Fixed paper capacitors for telecommunication	41180
Fixed plastic capacitors two sizes	41381/2
Power amplifiers for telecommunication	45560, B1.1
Plug and receptacle for antenna connection	41583
Electronic tube sockets with 5 contacts	41560
Thimbles for anchor wire rope	48326
Wire rope clamps	48335
Different semi-finished aluminum products used in electrical engineering	40501
Solid suspension insulators for overhead power lines	48009
Plastic and foil capacitors for 63 v and 250 v	41386
Oil-cooled transformers, 6 percent short-circuit voltage, copper winding, standard induction, up to 1600 kva and 30 kv, three phase, 50 cps	42510, B1.1
Overhead power lines. Wires for conductors and cable, steel	48200, B1.3;
Overhead power lines. Caps for hanging insulators	48061
Insulated metal conduits for different sizes of conductors	49048
Plastic boxes for mounting switches and receptacles	49070
Ceramic bushings	48033
Terminal binding posts 2- and 3-pole	46281
High voltage 3-pole switches from 10 to 220 kv	43610
Electric railroads. Brush holders. Details	43052
Heat-absorbing element for starters and braking	43215
Street cars with full voltage motors on both axles	43205
Roof-type resistance for street cars. Dimensions	43214, B1.1
Lead-in insulating bushings for inside installation, group B, series 1 to 20	48104, B1.2
Steel (nickel-cadmium) storage batteries	40753
List of standards, d-c crane motors	42105
Nominal sizes, resistances	

and weights of wires for overhead line made of copper, aluminum and aldrey, metal 48200, B1.1
Lead-in insulating bushing for inside installation 48104, B1.1
Binding post strips, two- and three-pole 46280
Cartridge fuses, type D, up to 500 v 49360, B1.2
Ring and plug gages for fuses D and E 49360/1
Ceramic bushing and cap for fixed capacitors 41108, B1.1

INDIA **IS**

General requirements for electrical appliances for domestic use 302
Leclanché type inert cells 267
Leclanché type sack cells 268
Hard-drawn copper solid and stranded circular conductors for overhead power transmission purposes (tentative) 282

IRELAND **IS**

Electrical plug and socket outlets (10 amp, continental type) 23:1950
Tungsten filament general service electric lamp 25:1950

MEXICO **DGN**

Concentric electric cables of hard, medium and soft copper wire J-12
Electric cables made of bare copper strands J-13
Electric cables made of strand of concentric cables J-14
Lead of lead-alloy sheathing for electric insulated cables J-15

POLAND **PN**

Graphical symbols for leaf-spring jack switches T-01120
Magnitudes and units used in electrical engineering symbols E-01100

RUMANIA **STAS**

3-phase oil transformers up to 1800 kva and 35 kv 1703
Copper wire insulated with cotton or silk 1726
3-phase asynchronous motors 1 to 100 kw and up to 500 v 1764
Support insulators, 1 to 20 kv, for indoor installation 1785

SWEDEN **SIS**

Fixed resistors for radio circuits P 52-01
Size of perforations for radio tube sockets P 52-02

UNION OF SOUTH AFRICA **SABS**

Safety specification for small extra low voltage transformers SV 118-1950
Safety specification for apparatus connectors for portable domestic appliances SV 121-1950
Safety specification for lampholders and bayonet lampholder adaptors SV 119-1950

UNITED KINGDOM **BS**

Safety requirements for electric fires 1670:1951
Reinforced concrete poles for electrical transmission and traction systems 607:1951

621.753 Tolerances, fittings, gages

ARGENTINA **IRAM**

Basic hole system of fits 5003
Basic shaft system of fits 5004
Length gaging 5032

GERMANY **DIN**

ISA system of tolerances and fits 7154, B1.1, 2
7155, B1.1, 2
Different types of limit gage plugs 2245-2249
Plug gage for Whitworth thread 2294

SWEDEN **SIS**

ISA system of tolerances and fits 562, 563, 566, 567, 568
Gages: general table of different types 1335
Gage blanks. Examples 1336
7 standards, plug gages up to 180 mm 1337 thru 1343
Flat gages, max nominal diam 18-180 mm 1344
4 standards, plug spherical-ended gages 1345 thru 1348
5 standards, reference plug gages up to 300 mm 1349 thru 1353
Master plug gages up to 18 mm 1354
Master plug gages over 18 mm up to 180 mm 1355
Ring gages from 1 to 180 mm 1356
6 standards, plug thread gages, different sizes 1357 thru 1362
Ring reference thread gages 1363
11 standards, gage blanks, plug and ring, different sizes 1486 thru 1496
3 standards, different gage handles 1497, 1498, 1499

UNION OF SOVIET SOCIALIST REPUBLICS **USSR**

Gages for round holes under 1-mm in diameter 5939

665.4 Mineral Oils, Fats and Waxes

ARGENTINA **IRAM**

Petroleum products. Nomenclature 6501
Petroleum products. Determination of specific gravity by means of densimeter 6505

NETHERLANDS **HCNN**

Petroleum products. Test for vapor pressure by Reid method 928

POLAND **PN**

Light ethylized aviation fuel C-96028
Light non-ethylized aviation fuel C-96029
Mineral oils for hydraulic apparatus on airplane C-96050
Aviation motor oils C-96086
Method of test for oxidation stability of gasoline (induction period method) C-04040

SPAIN **UNE**

Transformer oils. Determination of physical characteristics 7021
Transformer oils. Determination of chemical characteristics 7022
Homogenization of bituminous products 7031
Determination of viscosity of tar 7032
Linseed oil raw and refined 48001
48002

SWITZERLAND **SNV**

Foaming characteristics of mineral oils 81050
Congealing point test of mineral oils 81107
Vapor pressure of mineral fuel oil for "Otto" motors (modified Reid method) 81108

621.791 Soldering, Welding, Cutting

AUSTRIA **ÖNORM**

Steel structures. Rules for welders B 4300, part 7

BELGIUM **NBN**

Code of good practice relative to welded steel structures. Gas welding. Raw materials 211
Code of good practice relative to welded steel structures. Chapter V 62

SPAIN **UNE**

Covered electrodes for arc welding 14002

691 Building Materials

ARGENTINA **IRAM**

Fine aggregates. Determination of specific gravity and water absorption 1520
Artificial marble tiles 1528

GERMANY **DIN**

Low density concrete 4164

ISRAEL **SI**

Clay bricks 11
Pre-cast reinforced concrete steps 42

POLAND **PN**

Asbestos-cement non-pressed slabs, flat and undulated B-14041
Raw material used for making building tar paper B-27601

687.9 Brush Manufacture

POLAND **PN**

Brushes, Dusting B-61030/1
Brushes for Spark Plugs S-61053
Three Types of Painter's Brushes B-61038/9/40

What's New on American Standard Projects

Development of Methods Covering the Application of Gypsum Wallboard, A97—

Sponsors: American Institute of Architects; Gypsum Association

Organization of a project on the methods of applying or installing gypsum wallboard has just been approved by the American Standards Association.

The extensive use of gypsum wallboard in new home construction today has increased the nationwide demand to such an extent that industry members believe there is an urgent need for standard methods of installation. They want to be able to install the wallboard with the same degree of accuracy and quality regardless of whether it is used in New York, Nashville, Chicago, Des Moines, Denver, or Los Angeles.

In requesting this project, Lloyd H. Yeager, General Manager of the Gypsum Association, stated, "Today almost half of the new homes are being constructed with gypsum wallboard. It is being used in commercial construction where one-hour fire-resistive walls and ceilings are required. For these reasons and because the technique of good application is now well defined, we believe the industry needs and will use such a standard which we hope to popularize and make as effective in the application of gypsum wallboard as the plastering standard has been to the plastering industry."

Organizations that are being invited to participate in this work are:

AFL Brotherhood of Painters, Decorators and Paperhangers of America
AFL United Brotherhood of Carpenters and Joiners of America
American Institute of Architects
American Society for Testing Materials
Associated General Contractors of America, Inc
Building Officials Conference of America
Federal Housing Agency
Federal Specifications Board
Gypsum Association
Housing and Home Finance Agency
National Association of Home Builders
National Paint, Varnish and Lacquer Association
National Production Authority
National Retail Lumber Dealers Association
Pacific Coast Building Officials Conference
Society of Residential Appraisers
Southwest Research Institute
U.S. Dept of Army, Corps of Engineers and Quartermaster Corps
U.S. Dept of Navy, Bureau of Yards and Docks
U.S. Dept of Commerce, Construction Division, National Bureau of Standards
Veterans Administration

J. T. Lendrum, Director, Small Homes Council, University of Illinois, Urbana, Illinois, has been invited to be a member-at-large. Charles Immer Company, Washington, D. C., and The Hummer Systems, Inc, Omaha, Neb. two well-known installers of gypsum wallboard, have also been invited to participate.

Washers and Machine Rings, B27—

Sponsors: The American Society of Mechanical Engineers; Society of Automotive Engineers

Subcommittee 3 on Snap, Retainer, and Bearing Rings held an organization meeting, October 24, 1951, for the purpose of outlining a program looking toward the standardization of snap rings, machine rings, bearing rings, and others. E. D. Cowlin, Reliance Spring Washer Division, Eaton Manufacturing Company, Massilon, Ohio, serves as chairman of this subcommittee.

Reported by the American Society of Mechanical Engineers

Industrial Power Trucks, B56—

Sponsor: The American Society of Mechanical Engineers

Sectional Committee B56 met October 17, 1951, and noted that almost 4000 copies of the American Standard Safety Code, B56.1-1950, had been sold during the first two months following its publication—making it second in popularity to the elevator code. Manufacturers as a group are complying with the code except where their customers require special equipment. It was recommended that copies be distributed to State authorities for consideration and adoption. It was further agreed that the problem of manufacturing a truck capable of operating in hazardous areas should be given consideration. To date no manufacturer has designed a truck at any cost to accomplish the purpose completely.

Reported by the American Society of Mechanical Engineers

Definitions of Electrical Terms, C42—

Sponsor: American Institute of Electrical Engineers.

Subcommittee 5 of Sectional Committee C42 "Definitions of Electrical Terms" held a meeting at the Statler Hotel in New York on January 22, 1952. The members of the subcommittee discussed a revised draft of proposed definitions of Group 25 dealing with control terms. The proposal included the definitions submitted by members of Subcommittee C5 and also considered comments received from other subcommittees of C42. Agreement was reached on all definitions which had been proposed and a final draft of Group 25 is now in preparation for submission to J. J. Anderson, secretary of Committee C42.

Reported by G. W. Hermann, Industry Control Department, General Electric Company, chairman, Subcommittee 5

Transformers, Regulators and Reactors, C57—

Sponsor: Electrical Standards Committee

Sectional Committeee C57 held a meeting in New York City on January 23, 1952, Vice-Chairman J. H. Chiles, Jr, Westinghouse Electric Company, presiding. Progress in standardization work was reviewed and the various subcommittees reported. The work is carried out largely by 10 subcommittees covering specific types of apparatus, test codes, guides for operation, and international standardization. These subcommittees, in addition to developing standards themselves, make full use of proposals developed in committees of the American Institute of Electrical Engineers, the Edison Electric Institute, and the National Electrical Manufacturers Association.

A revision of C57.13, Instrument Transformers, has been favorably voted on and is expected to be pub-

Daily News Record Photo

Ceremony at the January 18 Council meeting of the American Society of Textile Chemists and Colorists when AATCC signed a contract with the British Society of Dyers and Colourists to publish a tabulation of all dyestuffs and their properties commercially manufactured in the U.S.A., Great Britain, France, Germany, Switzerland, and other countries. The first printing of this monumental study will be ready for distribution in 1953. Front row (left to right): Dr Harold C. Chapin, secretary, AATCC; C. Norris Rabold, AATCC president; William Cady, Colour Index Committee chairman; back row (left to right): W. A. Herrmann, AATCC lawyer; Dr E. R. Laughlin, Colour Index Committee secretary.

lished within a few months.

Proposed Standards for Transformers, 500 through 10000 kva, 3-phase, 501 through 5000 kva, 1-phase; 67000 volts and below were approved. Publication of these as "Proposed American Standard" will be made in the very near future. Publication in the "proposed" form will enable those who desire to specify in accordance with these standards to do so. It is contemplated that the approval status will be reviewed after one year. Standards for such items as kva and voltage ratings, taps, basic insulation levels, polarity, standard tests, mechanical features, and accessories are established.

Certain revisions regarding dielectric tests in C57.11, General Requirements, and in C57.22, Test Code, were agreed upon. Publications of these revisions will be delayed pending other revisions which are expected to follow.

H. R. Arnold, who attended a meeting of the International Electrotechnical Commission at Estoril, Portugal in July 1951, as the U. S. delegate on the subject of transformers, submitted a comprehensive report on the actions taken which are expected to result shortly in a new IEC publication on Transformers.

The IEC has recently established a project on instrument transformer standardization.

Reported by E. B. Paxton, General Electric Company, *Secretary*

Rayon and Acetate Fabrics, L22—

Sponsor: National Retail Dry Goods Association

Jay D. Runkle, chairman of Sectional Committee L22, has asked a subcommittee to review the flammability provisions in each of the proposed American Standards for end-use rayon and acetate fabrics. This request was made because of the flammable sweaters that have received nation-wide attention recently.

At a meeting in February last year the sectional committee passed a resolution asking the Sectional Committee on Textile Test Methods, L14, to devise test methods for abrasion to be incorporated into the tests in the proposed standards for rayon and acetate fabrics. The subcommittee has been asked to make recommendations to committee L22 on this problem as well.

Abbreviations, Y1—

Sponsor: The American Society of Mechanical Engineers

Sectional Committee Y1 met at ASME headquarters on October 22, 1951, and appointed three subcommittees: One each to review two active standards and the third to decide where additional standards are needed. The elected officers are S. A. Tucker, American Society of Mechanical Engineers, chairman; Rupert Le Grande, Associate Editor, *American Machinist*, New York, vice-chairman; and J. J. Costa, Professor of Civil Engineering, Manhattan College, New York, secretary. The work of Y1 is limited to the field of abbreviations of terms used in engineering and physical sciences and technology.

Reported by the American Society of Mechanical Engineers

Drawings and Drafting Practice, Y14—

Sponsors: American Society of Mechanical Engineers; American Society of Engineering Education

At a meeting of the Executive Committee of Y14, M. Lamanno, structural engineer, Allied Processes, New York, was elected chairman of Subcommittee No. 14 on Structural Drafting.

Reported by the American Society of Mechanical Engineers

Safety Glazing Materials, Z26—

Sponsors: Association of Casualty and Surety Companies, Accident Prevention Department; National Bureau of Standards, U. S. Department of Commerce

To answer the questions that frequently arise in applying the American Standard Safety Code for Safety Glass, Z26.1-1950, the sectional committee has organized an Interpretations Sub-Committee. The members were selected with a view to equitable representation of the entire sectional committee membership. They are:

American Association of Motor Vehicles

Administrators — Wilbur L. Cross, Jr, Chief, Division of Engineering and Inspection, Connecticut Department of Motor Vehicles, Hartford, Connecticut.

American Ceramic Society—Dr George B. Watkins, Director of Research, Libbey-Owens-Ford Glass Company, Toledo, Ohio

American Society for Testing — H. C. Mougey, Director, Research Laboratories Division, General Motors Corporation, Detroit, Michigan

American Society for Testing—H. K. Nason, Monsanto Chemical Company, St. Louis 4, Missouri

Association of Casualty & Surety Cos — T. B. McMath, Director, Boiler & Accident Prevention Division, Maryland Casualty Company, Baltimore 3, Maryland

Electrical Testing Laboratories, Inc—William F. Little, Engineer, Electrical Testing Labs, Inc, New York 21, N. Y.

National Bureau of Standards — C. H. Hahner, Chief, Glass Section, National Bureau of Standards, Washington 25, D. C.

Library Work and Documentation, Z39—

Sponsors: Council of National Library Associations

Permanent officers elected at a meeting of the committee in November, 1951, are: Verner W. Clapp, Chief Assistant Librarian, Library of Congress, Washington, D. C., *Chairman;* Jerome K. Wilcox, College of the City of New York Library, New York, *Vice-Chairman;* Robert E. Kingery, Chief, Preparations Division, New York Public Library, New York, *Secretary-Treasurer.*

Subcommittees are already at work on abbreviations for periodicals, Cyrillic transliteration, layout of periodicals, serial title abbreviations, and library statistics.

The committee was represented at a meeting of international committee ISO/TC 46 in Rome last September. The representative reported that the ISO committee deferred its final decisions on Cyrillic transliterations and on abbreviations of periodical titles to give Committee Z39 time to study what had been done and to determine what is acceptable to librarians in the U. S.

The Z39 Subcommittee on Abbreviations has studied the draft recommendations of ISO setting up principles for determining abbreviations. In order to put the work on a more practical basis, however, it has recommended that a survey be made and dictionary of abbreviations now in use in technical journals be compiled.

The subcommittee on Cyrillic transliteration found that the ISO proposals are not adequate for English-speaking nations.

The subcommittee on the layout of periodicals has compared the American Standard Z39.1-1943 with the ISO recommendations. Its comments on the ISO draft are being distributed to Z39 members, and will be forwarded to TC 46.

The committee has scheduled another meeting in April 1952.

Areas in Buildings Z65—

Sponsors: Office of Education, Federal Security Agency; National Association of Building Owners and Managers.

Formal approval for the initiation of this project on determination of areas (rentable or usable) in buildings has been given by the Building Code and Construction Standards Correlating Committee. Scope of the project is: "Methods of determining usable or rentable areas in buildings from plans."

Representatives of the sponsors and the chairman and secretary of the BCCSCC are meeting in Washington early in February to make plans for organizing the sectional committee.

One of a Series by TOM ROSS

A dramatic and convincing demonstration was given in London in 1908 of the rapid progress toward standardization that the United States had even then achieved in the manufacture of its automobiles.

In February and March of that year, Henry M. Leland chose three one-cylinder Cadillac cars at random from the warehouse of the agency in London. The cars were taken to the Brooklands Race Track and there were completely dismantled. A control commission of the Royal Automobile Club of England scrambled the parts into three piles of 724 each and then replaced 89 of the parts with new parts from stock.

Three new cars were reassembled from the piles of standardized parts without hand fitting. The only tools allowed were wrenches and screwdrivers; files and emery cloth were forbidden. The cars were driven 500 miles over the Brooklands Track with only one minor adjustment.

AMERICAN STANDARDS

Status as of February 8, 1952

Legend

Standards Council.—Approval by Standards Council is final approval as American Standard; usually requires 4 weeks.

Board of Review.—Acts for Standards Council and gives final approval as American Standard; action usually requires 2 weeks.

Correlating Committee.—Approve standards to send to Standards Council or Board of Review for final action; approval by correlating committee usually takes 4 weeks.

Consumer

American Standards Just Published—

Standard Method of Test for Hard Scoured Wool in Wool in the Grease (ASTM D 584-50; Revision of ASA L14.40-1949) $.25

Tentative Methods of Test for Fineness of Wool (ASTM D 419-50 T; Revision of ASA L14.26-1949) $.25

Tentative Methods of Test for Fineness of Wool Tops (ASTM D 472-50 T; Revision of ASA L14.29-1949) $.25

Tentative Methods of Testing and Tolerances for Glass Yarn (ASTM D 578-50 T; ASA L14.36-1951) $.25

Standard Recommended Practice for a Universal System of Yarn Numbering (ASTM D 861-50; Revision of ASA L14.48-1949) $.25

Sponsors: American Association of Textile Chemists and Colorists; American Society for Testing Materials

In Standards Council—

Standards for Rayon Fabrics, and Test Methods for Rayon Fabrics, L22

Sponsor: National Retail Dry Goods Association

Electrical

In Correlating Committee—

Methods of Testing Electron Tubes, (IRE 7.S2; ASA C60.5)

Measurement of Direct Interelectrode Capacitance (RTMA Std ET-109-A; NEMA Pub 505-A)

Sponsor: Joint Electron Tube Engineering Council

Horticulture

In Correlating Committee—

Nursery Stock, Z60.1 (Revision of Z60.1-1949)

Sponsor: American Association of Nurserymen

Mechanical

American Standards Just Published—

Wrought Copper and Bronze Solder Joint Fittings, B16.22-1951 $.75

Malleable-Iron Screwed Fittings, 150 Lb, B16.3-1951 $1.00

Sponsors: Heating, Piping, and Air Conditioning Contractors National Association; American Society of Mechanical Engineers; Manufacturers Standardization Society of the Valve and Fittings Industry

American Standard Just Approved—

Physical Specimens of Surface Roughness and Lay, B46.2-1952

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

In Correlating Committee—

Accuracy of Engine and Tool Room Lathes, B5.16

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers; Metal Cutting Tool Institute; National Machine Tool Builders Association

Ring-Joint Gaskets and Grooves for Steel Pipe Flanges, B16.20

Sponsors: American Society of Mechanical Engineers; Heating, Piping, and Air Conditioning Contractors National Assn; Manufacturers Standardization Society of the Valve and Fittings Industry

Stainless Steel Pipe, B36.19

Sponsors: American Society of Mechanical Engineers; American Society for Testing Materials

Square and Hexagon Bolts and Nuts, B18.2 (Revision of B18.2-1941 Round Unslotted Head Bolts, B18.5 (Revision of B18.5-1939)

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

Reaffirmation Requested—

Cast-Iron Pipe Flanges and Flanged Fittings, 800 Lb Hydraulic Pressure, B16b1-1931

Cast-Iron Pipe Flanges and Fittings (For Maximum WSP of 25 Lb), B16b2-1931

Steel Socket Welding Fittings, B16.11-1946

Brass or Bronze Screwed Fittings, B16.15-1947

Cast-Iron Flanges and Fittings for Refrigerant Piping (Class 300), B16.16-1948

Requested by: American Society of Mechanical Engineers

Withdrawal Requested—

Cast-Iron Long Turn Sprinkler Fittings, B16g-1929 R 1947

Requested by: American Society of Mechanical Engineers; Heating, Piping, and Air Conditioning Contractors National Assn; Manufacturers Standardization Society of the Valve and Fittings Industry

Optics

American Standard Just Approved—

Nomenclature and Definitions in the Field of Colorimetry, Z58.1.2-1952

Sponsor: Optical Society of America

Petroleum Products and Lubricants

American Standards Just Published

Test for Benzene and Toluene by Ultraviolet Spectrophotometry, ASTM D 1017-51; Z11.70-1951 $.25

Test for Olefinic Plus Aromatic Hydrocarbons in Petroleum Distillates, ASTM D 1019-51; ASA Z11.71-1951 $.25

Test for Apparent Viscosity of Lubricating Greases, ASTM D 1092-51; ASA Z11.72-1951 $.25

Test for Sodium in Lubricating Oils and Lubricating Oil Additives, ASTM D 1026-51 as revised on p 8 of 1951 ASTM D-2 report; ASA Z11.73-1951 $.25

Test for Flash Point by Tag Closed Tester, ASTM D 56-51; ASA Z11.24-1951 $.25

Definitions of Terms Relative to Petroleum, ASTM D 288-51; ASA Z11.28-1951 $.25

Test for Neutralization Value (Acid and Base Numbers) by Electrometric Titration, ASTM D 664-51; ASA Z11.59-1951 $.25

Test for Distillation of Plant Spray Oils, ASTM D 447-51T; ASA Z11.43-1951 $.25

Test for Unsulfonated Residue of Plant Spray Oils, ASTM D 483-51T; ASA Z11.41-1951 $.25

Test for Carbon Residue of Petroleum Products (Ramsbottom Carbon Residue) ASTM D 524-51T; ASA Z11.47-1951 $.25

Sponsor: American Society for Testing Materials

Photography

Reaffirmation Requested

Dimensions of Front Lens Mounts for Cameras, Z38.4.10-1944

Specifications for Printing Frames, Z38.7.11-1944

Method for Determining Resolving Power of Lenses for Projectors for 35-Mm Slidefilm and 2- x 2-Inch Series, Z38.7.16-1947

Requested by: Photographic Standards (Correlating) Committee

Safety

American Standard Just Approved—

Code for Forging and Hot Metal Stamping, B24.1-1952 (Revision of B24-1927)

Sponsors: Drop Forging Association; National Safety Council

(Continued on next page)

In Correlating Committee—

Safety Code for Mechanical Power Transmission Apparatus (Revision of B15-1927)

Sponsors: Association of Casualty and Surety Companies, Accident Prevention Department; International Association of Governmental Labor Officials

Rubber Insulating Gloves, J6 (Revision of ASTM D 120-40; ASA C59.12-1942)

Sponsor: American Society for Testing Materials

Safety Project

(*Continued from page* 75)

One of the most serious problems arises when employees change from one plant to another, it was explained at the conference. Because printing presses and binding and cutting equipment do not have uniform control devices a man in a new job who is unfamiliar with the machine he is using may reach for a shut-off switch in an emergency only to find that it is not in the spot to which he has been accustomed. Operators have a habit of reaching and feeling for the control switch, it was explained. For this reason it was suggested that each button might have a distinctive shape and location.

At present, the power control button is in almost as many different positions as there are machines. Sometimes a workman faced with an emergency while working on one side of a machine is out of reach of the control button on the other side.

At times a man stops a press to make an adjustment or repair. Unless the machine is equipped with special controls to prevent it from being started, he can sustain serious injury if a fellow workman happens to start the machine.

Accidents happen when warning signals are misunderstood. Bells are used in one plant to signal that a machine is about to start; horns are used in another; whistles in a third; and flashing lights in a fourth.

Agreement on standard warning signals and controls would not only help printing plants by furnishing a guide to good practice but also help manufacturers who now may be called upon to build any number of different types of signals and controls into their machines.

Twenty-six organizations concerned with the printing industry, manufacture of printing equipment, and safety are being invited to participate in the work of this committee.

International Meetings in New York

June 9-26

FIFTEEN technical committees of the International Organization for Standardization are now scheduled to meet in New York, June 9-26. The American Standards Association is acting as host. The country holding the secretariat for each committee is shown in parentheses in the following list:

	June
Ball and Roller Bearings, ISO/TC 4 (Sweden)	16-19
Radial Bearings, ISO/TC 4/SC 1 (Switzerland)	23-24
Taper Roller Bearings, ISO/TC 4/SC 2 (United States)	25-26
Cast Iron and Cast Steel, ISO/TC 25 (United Kingdom)	9-11
Cinematography, ISO/TC 36 (United States)	9-10
Iron and Steel, ISO/TC 17 (United Kingdom)	9-12
Lac, ISO/TC 50 (India) with ASTM Meetings	23-25
Limits and Fits, ISO/TC 3/SC 1 (France)	16-19
Machine Tools, ISO/TC 39 (France)	11-13
Marks Indicating Conformity with Standards, ISO/TC 73 (France)	14
Mica, ISO/TC 56 (India)	9-11
Petroleum Products, ISO/TC 28 (United States)	12-14
Preferred Numbers, ISO/TC 19 (France)	9-10
Screw Threads, ISO/TC 1 and subcommittees or working groups (Sweden)	11-14
Textiles, ISO/TC 38, Subcommittees 5 (United States), 6 (France)	13-16

The ISO Council 16-18. The General Assembly 20-21.

Holland Standardizes

(*Continued from page* 74)

have been considerably reduced by replacing nonstandard products by standard ones. This is especially true in the case of flushing cisterns. This apparatus was standardized about 1920 and now the standard type N 330 is almost exclusively used.

The erection of fire-fighting cocks of standard form in all Netherlands municipalities is of obvious advantage for mutual assistance.

Finally, it appears that difficulties due to the use of nonstandard materials immediately after the war have been overcome and various Netherlands manufacturers now again comply with standards, as was the case in 1940. This especially applies to those allowed to use the certified mark, "Nenorm" (manufactured according to Netherlands standards).

Watch for Part II of this Article in the April Issue.

How Do You Measure Areas?

(*Continued from page* 82)

project, the American Standards Association canvassed organizations representing owners of commercial buildings and school administrators. Replies indicated that these groups believed an American Standard method, developed by representatives of all groups concerned, would be desirable.

One Manhattan real estate broker,

commenting on the present situation to a newspaper interview recently, declared: "The public should know clearly what area it is receiving for the rent dollar. Real estate is a basic commodity and it should inspire everyone with confidence and trust. Standard rules for the measurement of office space, followed in all buildings, would help to inspire that confidence."

A committee to do the technical work necessary to develop a standard method is now being organized. The National Association of Building Owners and Managers and the Office of Education of the Federal Security Agency will act as joint sponsors.

• • **Again this year** The American Standards Association is giving its backing to the Greater New York Safety Convention and Exposition by acting as one of the co-sponsors. The four-day event is to be held at the Hotels Statler and New Yorker, New York City, April 1, 2, 3, and 4, 1952. Fifty sessions are being planned in traffic, industry, school, and home safety. The Exposition will offer a complete display of protective equipment and safety material.

• • **Dr. A. T. McPherson,** formerly Chief of the National Bureau of Standards Organic and Fibrous Materials Division has been appointed Associate Director of the National Bureau of Standards. As Associate Director he will be responsible for the coordination and direction of the Bureau's work in calibration, testing, and specifications.

• • **"It is part of the safety engineer's philosophy** that accident severity is not so significant as frequency. The reasoning behind this is that factors controlling accident frequency (accident causes) are subject to control by supervisory personnel. On the other hand, the factors controlling accident severity are often fractions of a second or fractions of an inch which are not readily subject to control. To put it more simply, if we can prevent the tool from being kicked off the overhead walkway we don't have to worry about whether the falling hammer just misses the employee or strikes him on the top of his head. Severity rates are important, however, in evaluating the seriousness of injuries which have occurred. Accident severity is the number of days lost or days charged per 1000 exposure hours. My use of the term 'days charged' refers to the American Standards Association schedule for time charges to be used in evaluating permanent disabilities, such as loss of member or loss of vision. In addition, scheduled time charges are established for permanent total disabilities and fatalities."—

From "Accident Trends in the Chemical Industry," by S. M. MacCutcheon, Dow Chemical Company, Midland, Mich. *Chemical and Engineering News*, Sept. 3, 1951.

• • **The German national standards association,** Deutscher Normenausschuss, has become the thirty-third member of the International Organization for Standardization. Professor Alfred Rachel is president of the German body.

This Month's Standards Personality . . .

William L. Batt, minister in charge of the Mutual Security Agency's Mission to the United Kingdom, received the Hoover Medal for 1951 at the annual meeting of the American Society of Mechanical Engineers last November. The award was made in recognition of "his leadership in engineering, management, and public responsibility, and his many distinguished services to his community and the nation."

His special service to standardization was given when he promoted and encouraged unification of American-British-Canadian standards on screw threads, setting the pattern for other unification standards now being developed. As vice-chairman of the War Production Board and as U.S. member and representative of the Combined Raw Materials Board and the Combined Production and Resources Board, he was brought face-to-face with the need for unification of standards. For his services with these wartime boards he received the Medal for Merit from President Truman.

Now, again, he meets the need for unification as an everyday problem. As U.S. representative on the NATO Defense Production Board, he is vitally interested in increasing international standardization in defense production. As chief of the MSA mission to the United Kingdom he has an indirect interest in standardization and simplification within British industry. His work encouraged the productivity teams that studied U.S. production methods and recommended more simplification and standardization in British industry. In industry, he served for some 43 years with SKF Industries, 28 of them as its president. In his profession, he is a past president of the American Society of Mechanical Engineers, and honorary member of the Society of Automotive Engineers, the Engineering Institute of Canada, and the Institution of Mechanical Engineers (England). He has served as director of the National Policy Committee and of the American Standards Association. A graduate of Purdue University, Mr Batt holds honorary degrees from Purdue, Stevens Institute of Technology, University of Pennsylvania, Drexel Institute of Technology, and Rose Polytechnic Institute.

• • **The United States Testing Company** has warned that legislation to control the sale of fast-burning textile materials, such as those that figured in the recent sweater fires, can do as much harm as good if not properly administered. Legislation to restrict the sale of highly flammable materials should make use of laboratory techniques at the various stages of manufacture of a textile article, the company declares. Any attempt to draft legislation without due consideration to the test technique would result in a high degree of confusion in the entire textile industry, the company points out.

"Even under present conditions, where legislation governing the sale of flammable textiles is in force in only one state, the testing company has to be equipped with test apparatus specifically for that State, as well as three other testing units in partial use on a nation-wide scale," the company explains. "If legislation must be drawn, the testing company feels that it should be on a national level in order that laboratories throughout the country can be equipped to conduct the huge volume of testing necessary to weed out those materials which are apt to present a hazard or require special fire-retardant finishing."

The company assisted in the development of the Standard Flammability Tester of the American Association of Textile Chemists and Colorists and now manufactures this instrument for sale to the industry. This test apparatus provides a standard means for gaging the ease with which fabrics such as those used in the sweaters will take fire and the rate at which they burn after ignition takes place.

In explanation of the recent sweater fires, the company declares:

"The term 'brushed rayon' has been applied quite generally in connection with the sweaters. The classification is considered technically correct in the case of the particular garments that have come to the attention of the United States Testing Company. However, it must be realized that 'brushed rayon' is a broad classification of goods and that it is only by scientific control testing that the classification can be broken down into fabrics of normal flammability, those that are questionable, and those that are considered a hazard to the wearer."

There are many factors which must be understood in order to determine whether a garment is or is not of a hazardous nature. The type of fiber used in the fabric may not be of prime importance even though the cellulose fibers such as cotton, rayon, and acetate have a different reaction to flame than nylon, wool, silk, and some of the other fibers. The method in which the fibers are arranged in the yarn and fabric, and the amount of napping, influence the rate of burning. There is no particular hazard offered by flat rayon and acetate or cotton fabrics, as everyone must realize. It is only when a large quantity of loose fiber is piled on the surface of a fabric that it presents an easily ignitable and rapid-burning condition. The construction of the fabric enters into the rate of burning in much the same manner that making a pile of shavings of a block of wood changes the burning characteristics of this form of cellulose.

"As a public service, the United States Testing Company has offered its services to Police Chiefs in receipt of quantities of garments which have been turned into them for testing purposes. The main laboratories in Hoboken, New Jersey, stand ready to give an expert opinion on samples representative of the various types of garments that the city officials have on hand.

"The sample sweater which the United States Testing Company has on hand has been identified as having a viscose rayon and acetate backing fabric of circular knit construction with a tightly curled nap of viscose rayon and acetate with a depth of about one-eighth of an inch. The material, in standard tests made in accordance with the American Association of Textile Chemists and

Gaillard Seminar on Industrial Standardization

Seventeen organizations were represented at the private seminar on Industrial Standardization held in New York, January 21 through 25, by Dr John Gaillard, mechanical engineer on the staff of the American Standards Association and lecturer at Columbia University. The organizations are: American Machine & Foundry Co; Bristol Co; Bucyrus-Erie Co; Department of the Navy; Dominion Engineering Co, Ltd. (Canada); Eureka Williams Corp; Federal Telephone & Radio Corp; Goodman Manufacturing Co; International Business Machines Corp; Link-Belt Co; Phillips Petroleum Co; Porter-Cable Machine Co; Reliance Electric & Engineering Co; Reaction Motors, Inc; Revere Copper & Brass Inc; Stewart-Warner Corp; Sylvania Electric Products Inc. Six of these organizations had been represented at previous sessions of the Gaillard Seminar. Those in attendance are in charge of such functions as standardization; product design; research and development; inspection; or quality control, in their respective companies. Their diversified backgrounds, combined with their common interest in the systematic organization and management of company standardization work, led to highly informative round-table discussions following Dr Gaillard's lectures at the ten conferences.

Increasing interest in the seminar shown by industrial executives and technical experts has prompted Dr Gaillard to hold another five-day session, in the Engineering Societies Building, New York City, June 23 through 27, 1952.

Those wishing to make advance reservations may do so by phoning Dr Gaillard at ASA headquarters in New York (MUrray Hill 3-3058) or writing him at his home address, 400 West 118 Street, New York 27, N. Y.

Howard Coonley Medal

The Standards Medal

ASA Awards

In accordance with the policy and procedures adopted by the Board of Directors at its meeting on January 8, 1952, all Members of the American Standards Association are invited to send their nominations for 1952 recipients of the Howard Coonley Medal and the Standards Medal to the Managing Director of the American Standards Association.

The Howard Coonley Medal is for award to an executive who by his practice and preachments has furthered the national economy through voluntary standardization.

The Standards Medal is for award to an individual who has shown leadership in the development and application of voluntary standards.

Nominations for awards shall set forth clearly and in detail particular accomplishments or actions which are considered to justify the award proposed. They shall be submitted in triplicate on plain paper without indication as to the source of the nomination. Each such nomination must be accompanied by a letter of transmittal.

Nominations must be received at the headquarters of the American Standards Association not later than July 1, 1952.

Should there be any questions as to the nominating procedure, the Managing Director will be glad to receive them.

Colorists test method, was found to burn at a rate of 1.2 seconds for a five-inch length of specimen. A satisfactory rate of burning would exceed seven seconds in a case where the backing fabric ignites."

The question of textile flammability is one that will undoubtedly be taken up by the newly authorized committee for the development of safety standards for prevention of hazards to children (STDZN, Feb. '52, p. 42).

• • **Industrial Standardization** is again being presented by the Management Service Division of the Temple University Community College and Technical Institute as a short course available to management, supervisory and pre-supervisory personnel in business and industry.

This short course is meeting on 12 consecutive Mondays, starting on February 4, 1952, from 7 to 9 P.M. at the Temple University Community College Center, Philadelphia, Pa.

Instructors are Fred M. Oberlander and Madhu S. Gokhale, both of the RCA Victor Division, Camden. Both instructors possess wide backgrounds in standardization and offer a highly practical approach to the subject. Guest lecturers have been scheduled to cover certain specific areas, so that instruction at all times will be expert and realistic. All speakers are selected on the basis of knowledge, experience, and teaching ability.

Fee for the course is $35 per person.

The course outline follows: Definition and Objectives; Development of Standardization; Standardization of Basic Materials; Standardization of Electrical and Electronic Components; Standardization of Mechanical Parts; Standardization of Protective and Decorative Chemical Treatments and Surface Coatings; Drafting Standards; Application of Standardards; General Problems Connected with a Standards Program; Administrative Aspects of Standardization.

• • **A proposal** that would make it possible for the International Organization for Standardization to approve a standard developed by any international group, as an ISO Recommendation has been outlined by Vice-Admiral G. F. Hussey, Jr, managing director of the American Standards Association. The procedure would approximate on the international level the "existing standards" procedure under which the American Standards Association gives the status of American Standard to qualified specifications and test methods developed by trade associations and technical societies on the national level. Admiral Hussey has forwarded his proposal to all Member Bodies of the ISO for study preliminary to discussions at meetings of the Council and General Assembly in New York in June. Admiral Hussey explains:

"The fields indicated by the scopes of the 70-odd ISO Technical Committees in many instances extend into fields already covered by other international organizations. It appears that nothing would more quickly lower the prestige of the ISO than to call upon scientists and technicians from many nations to contribute to the work of a given ISO Technical Committee when these same scientists and technicians and their confreres have already accomplished identical or equivalent work under some other international organization. To do so would be unwarranted duplication and would certainly be an unjustifiable expenditure of time and effort."

Anti-Friction Bearing Mfg Assn, Inc

DO you have the latest data on
HOW TO MOUNT BALL AND ROLLER BEARINGS?
You will find the answer in two new American Standards:—

Specifications for Bearing Mounting for Ball and Roller Bearings, B3.8—1951 at $1.00
This outlines requirements that provide proper assembly between a ball and roller bearing, the shaft on which it is mounted and its housing. Gives minimum shaft shoulder diameter. Appendix lists shaft bearing seat diameters and housing seat diameters for various types of annular ball bearings and fitting practices for tapered roller bearings.

Specifications for Bearing Mounting Accessories, B3.9—1951, at $.50
Outlines standard requirements for components used to mount ball and roller bearings on shafts. Lists dimensions of locknuts and lockwashers for ball and roller bearings, and dimensions of adaptor sleeves. One series of adaptor sleeves is applicable to ball bearings and another series to wide self-aligning ball bearings and self-aligning roller bearings. Gives tolerances for side runout of locknuts for ball and roller bearings (except tapered roller bearings), together with the method of measuring side runout. Material specifications for locknuts, lockwashers, and adaptor sleeves are given in an appendix.

(Quantity prices on request)

American Standards Association
Incorporated

70 East 45th Street
New York 17, New York

Please send me ..... copies of the American Standard, Specifications for Bearing Mounting for Ball and Roller Bearing, B3.8—1951 at $1.00 each.

Please send me ..... copies of the American Standard, Specifications for Bearing Mounting Accessories, B3.9—1951 at $.50 each.

Name .....

Address .....

City ..... *Zone* ..... *State* .....

Remittance enclosed ..... *Send invoice* .....